JUL 8 - 1932

PENCIL POINTS

A JOURNAL for the DRAFTING ROOM

How I Approach an Architectural Problem . . . . *Irving K. Pond*

Further Thoughts on Contemporary Architecture . *William A. Delano*

Factors Frequently Overlooked in Planning Houses . *Arthur B. Lincoln*

The New Par . . . . . *Morgan Dudley E. Hite*

Problems in Monolithic Concrete Construction . . . *Otis F. Johnson*

Some Fallacies of Obsolescence . . . . . *Eugene B. Church*

Traveling Double—2 . . . . . *Sylvia Starr Wertz*

Draftsman's Data Sheets . . . . . *Don Graf*

Construction Detail . . . . . *Philip G. Knobloch*

Measured Drawings . . . . . *W. Beaty-Pownall*

Water Color Drawings of Two Interiors . . . *Vernon Howe Bailey*

JULY, 1932 35 CENTS A COPY

Photo courtesy *The Architectural Forum*

MODERN ARCHITECTURE certainly needs no defense when so convincingly interpreted as in the Racine County Court House at Racine, Wisconsin. Credit for this strikingly beautiful conception is due Holabird & Root, the Architects. Wisconsin Bridge & Iron Company were the Fabricators and the B-W Construction Company, General Contractors.

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CB SECTIONS

Pencil Points, published monthly by The Pencil Points Press, Inc., at 258 Atlantic St., Stamford, Conn. Publication office Stamford, Conn. Editorial and Advertising Offices 419 Fourth Avenue, New York, N. Y. Yearly subscription $3.00, single copies 35 cents. Entered as second class matter, March 10, 1930, at the Post Office, Stamford, Conn., under the Act of March 3, 1879. Volume XIII, No. 7. Dated July, 1932

Is the Modernization Field Worth Cultivating?

We call particular attention to the article by Morgan Dudley E. Hite in this issue under the heading "The New Par — Intensive Conservation Comes to America." In it the author states as his opinion that we are entering on a new era during which new building is going to be overshadowed by remodeling or "modernization" as it has come to be called—that from now on every existing building is going to be scrutinized very carefully to see if it is as efficient as it should be and, if not, how it can be made to look and work better, produce more revenue, and last longer.

Whether we agree or not, it is certain that modernization is going to be quite important for a while to the entire building industry. Architects, contractors, material dealers and producers will be wise to get in on all of this type of work they can, for it is going to help many of them to keep on existing. This being so, some practical plan of action is necessary—some systematic way of discovering, stimulating, and handling the many small projects that can add up to such an imposing total when they are put together.

An A.I.A. member, writing under the nom-de-plume "Gargoyle" in our January issue, proposed one plan that seemed to us at the time practical. It still seems so, but if anyone has yet put it into effect we have not heard of it. Perhaps it was advanced too soon—before the problem of finding work became sufficiently acute to cause architects to take it seriously. We suggest that a rereading of the article, in the light of present conditions, might make it seem more applicable to the average urban community.

Some progress has been made during the past year or so, particularly in the residential field. Several cities and towns conducted campaigns, headed by their local Chambers of Commerce, to relieve unemployment by means of home modernization. These campaigns were quite successful and resulted in the spending by home owners of hundreds of thousands of dollars in the aggregate, resulting in the betterment of their homes and communities as well as increased business and employment. The United States Department of Commerce's Committee on Reconditioning, Remodeling, and Modernizing, appointed to carry out the recommendations made to the President's Conference on Home Building and Home Ownership, has been carrying on this work, encouraging local Chambers of Commerce to initiate campaigns in their cities and towns and co-operating with them in various ways. We have no figures to show how much of this work has been done but we believe a substantial amount of money has been spent by home owners for modernization as a result of the movement.

The community goes about the thing in roughly the following way. The Chamber of Commerce organizes a Trade Promotion Committee on Repair and Modernization. This committee functions by making merchandising suggestions to the local contracting and supply organizations as to how they can reach the property owner to better advantage, and at the same time embarks on an intensive program of education and publicity directed at the property owner. If the property owner can be stimulated, by these efforts reaching him from several directions, into a frame of mind where he is interested in undertaking repairs or modernization, he is put into touch with an Advisory Board, also organized by the Chamber of Commerce, whose duty it is to help him in every way to go ahead. This Advisory Board usually includes an Architect, a Banker, a Building and Loan Company representative, a Builder, an Attorney, a Real Estate man, a Public Official, and the Secretary of the Chamber of Commerce. Such a board is obviously equipped to answer all questions concerning the desirability or feasibility of any modernizing project and has probably a good chance of pushing it through.

That is one way of handling the matter. So far it has only touched the home owning portion of the community. There still remain a vast number of buildings of other types that might be subjected advantageously to the same process of modernization. Many schools, apartment buildings, hospitals, stores, small office buildings, restaurants, small hotels, and other types are really in need of improvement.

H. H. Murdock, President of the New York Building Congress, in a recent statement concerning the present outlook for the construction industry said: "Campaigns to modernize and rehabilitate commercial and residential establishments offer the one immediate hope for activity in the next few months . . . . . New building cannot be counted upon to keep the industry profitably employed, but there is a vast amount of work along the lines of revamping, remodeling, and repairing that must soon be done if properties are not only to maintain their earning power but actually to stay in the market."

The architectural profession should certainly be willing to lend its best efforts to the modernization movement. It may be possible to make use of the unemployed draftsmen in the various cities to do a good bit of the scouting and survey work which will be necessary. In communities where such campaigns have already been organized, architects are undoubtedly playing an important part. In communities where no such movement has yet been started, architects will do well to take the initiative. Whatever form of organization is adopted it should be worked out carefully so that effort will not be frittered away by going ahead without a plan.

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PENCIL POINTS

An Illustrated Monthly JOURNAL for the DRAFTING ROOM *Edited by* RUSSELL F. WHITEHEAD KENNETH REID & E. L. CLEAVER *Published by* THE PENCIL POINTS PRESS, INC.
Ralph Reinhold, *President*, P. H. Hubbard, *Vice-President*, William V. Montgomery, *Secretary*

This Month and Next

Next month's article on the general subject of design philosophy will be written by William F. Lamb of Shreve, Lamb and Harmon. As a member of the firm entrusted with the design of the Empire State Building, the world's tallest structure, which is at the same time a magnificent example of modern architecture, the author may be sure of an attentive audience. Readers of PENCIL POINTS on their part may be sure that what Mr. Lamb has to say will be authoritative and to the point.

Another article on pen drawing by Sydney Castle will appear next month. This will be good news to those that have been following the series written by this master delineator that has been running for some time in PENCIL POINTS.

The article by Eugene B. Church, "Some Fallacies of Obsolescence," should be of particular interest at this time when the subject of modernization and conservation of old buildings is so much in the public eye. The article is an extremely logical presentation of the idea that present estimates of the economic life of a building are too low as compared with its physical life. If the intensive conservation predicted by Morgan Dudley E. Hite in another article comes to be the rule, the economic life of the average building will probably be extended. Another article by Mr. Church, entitled "The Equity and Its Earnings," will be presented in an early issue.

Although we announced for July publication a plan by Edward D. Pierre of Indianapolis to establish some sort of an accepted standard of good building, sponsored by the building industry and to be in time recognized by the public, we have found it desirable to postpone this material for another month. Mr. Pierre has made some revisions in the presentation of the plan which will make it more complete when it is finally published in the August issue.

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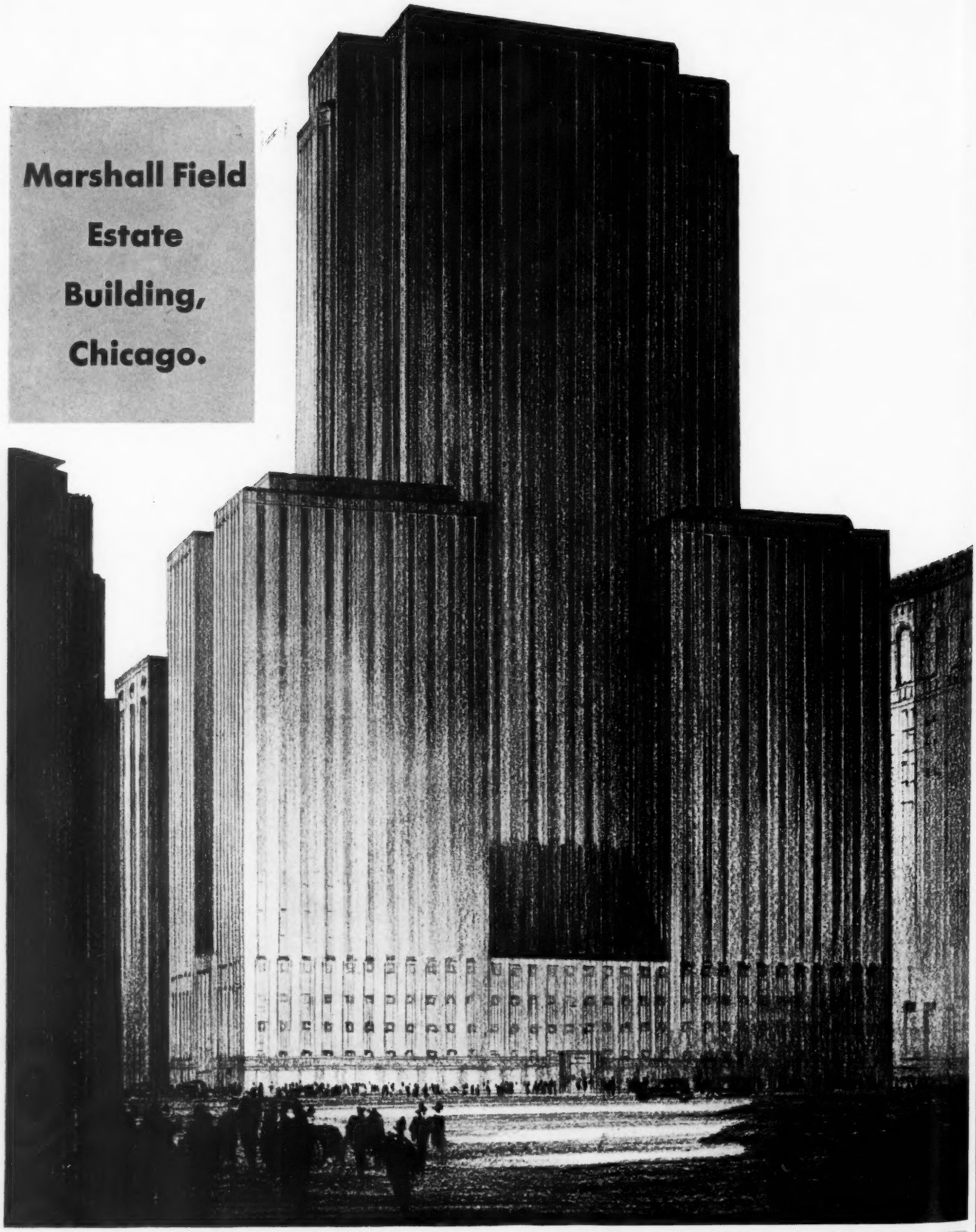
Part 21 of the series by Ernest Irving Freese, "The Geometry of Architectural Drafting," was all set in type, ready to go into this issue, but it became necessary to postpone its presentation until August. In it Mr. Freese will continue the discussion of orthogonal circles begun in the May issue.

Francis S. Swales' series, "The Architect and the Grand Plan," will also be resumed next month. Part 6 will treat of "The Architect's Status and His Part in the Development of Rome and its Economics." Mr. Swales brings out many parallels between Roman times and ours and makes it clear that any architect of today can profit by consideration of the practical affairs of antiquity.

The next "Monograph" will, as originally announced when *The Monograph Series* was incorporated in PENCIL POINTS, be included in the August issue. Its subject will be the early domestic architecture in the Oley Valley of Berks County, Pennsylvania. Later Monographs will appear in every other issue.

PENCIL POINTS—*Yearly subscription, payable in advance, $3.00 to the U. S. A., U. S. Possessions, Cuba, and Mexico. Foreign subscriptions in the Postal Union, $1.00 additional for postage; Canadian subscriptions, 50 cents additional. Remittances by International or American Express Money Order or by Draft on a bank in the U. S. Payable in United States Funds. Subscribers are requested to state profession or occupation. TO SUBSCRIBERS: Instructions for change of address should reach us before the twentieth of the month to assure delivery of the forthcoming issue. Please give both old and new addresses. TO CONTRIBUTORS: We are always glad to receive manuscripts, drawings, etc. We will use due care with material in our hands, but cannot be responsible for damages.* *Copyright, 1932, by The Pencil Points Press, Inc. Trade Mark Registered. All rights reserved.* *EDITORIAL AND BUSINESS OFFICES, 419 FOURTH AVENUE, NEW YORK.*
PENCIL POINTS is indexed regularly in *The Art Index*

Marshall Field Estate Building, Chicago.



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Pencil Points Series of Color Plates

Through the courtesy of "Country Life" we present Vernon Howe Bailey's drawing of this interior which was decorated by Elsie Cobb Wilson. Mr. Bailey made the drawing in a manner similar to that described on the back of the other color plate in this issue. The original drawing measures 15" x 20".

LIVING ROOM IN THE RESIDENCE OF CORNELIUS N. BLISS, ESQ.

FROM A WATER COLOR BY VERNON HOWE BAILEY

PENCIL POINTS
(July, 1932)

PENCIL POINTS

Volume XIII July, 1932 Number 7

How I Approach an Architectural Problem

By Irving K. Pond

Editor's Note:—*This article, by Irving K. Pond of Chicago, is the fifth of a series of articles in which leading architects will discuss the philosophy of contemporary design. Next month's article will be by William F. Lamb of New York. We recommend to all designers, young and old, that they read this entire series.*

It is much easier to design an object, such as a piece of architecture, let us say, along lines already established and to which a philosophy of design may or may not already have been fitted than to reach out into the void and at one and the same time create a design and the philosophy in which it shall be enveloped. The former is the easier but it leads nowhere and in the end accomplishes little; little more than momentary satisfaction to the designer; nothing but bulk has been added to the sum of human achievement. The latter is not so easy; but one who desires really to achieve does not necessarily choose the easier path. That a life work may be consistent, however varied the details of its manifestation, it is necessary that a sound philosophical basis underly it. Life is not static; it is movement; and the movement we like to believe is progressive. Therefore, the design would not at first necessarily be perfect and the underlying philosophy, which must be born of experience as well as inspiration, would not at first of necessity be fully rounded and complete. This would account in a measure for such inconsistencies as would seem to appear along the way as one, with the years, advances from the expression of the first primitive concept toward a more complete idealization. With the sincere worker the design and the underlying philosophy develop not side by side but in fusion of structure and purpose; the totality manifesting a unity of growth and progress. In the end the philosophy becomes compact and yet withal so comprehensive as to admit of manifold and varied expression.

I cannot deceive myself into believing, as certain autobiographers would seem to have made themselves believe of themselves, that I was born with a perfectly formed philosophy of life and design clear in my mind and that all I needed was a string of opportunities for its unfolding. All I care to believe about myself is that I came into the world with a normal intellect capable of development; with a normal body capable of responding to the dictates of my will and with potentialities in the line of a sympathetic penetration into nature and life; of feeling myself into the forms of nature so that in return I might draw from nature inspiration for art.

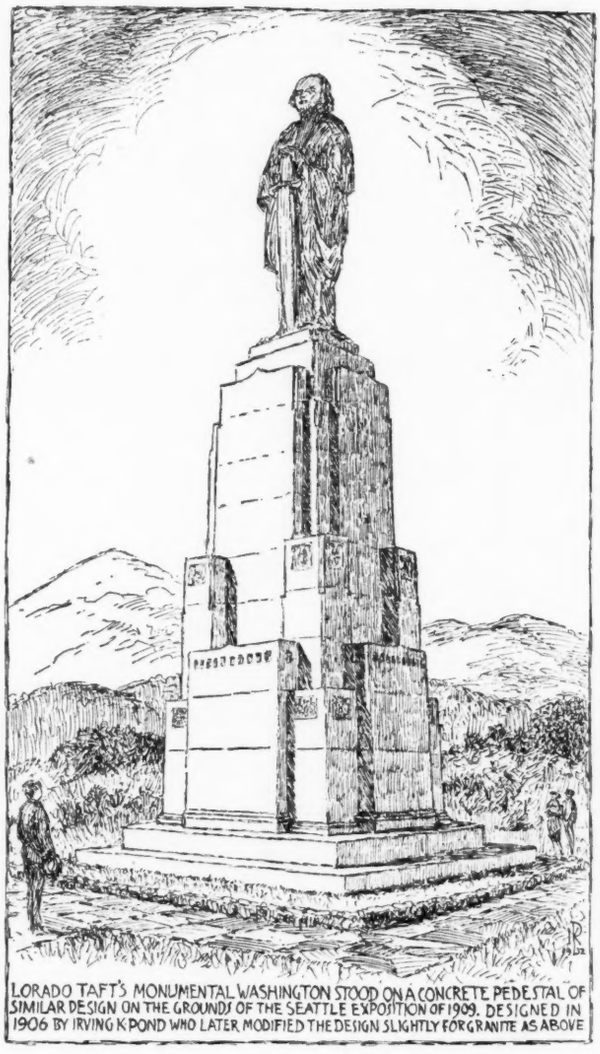
When I was young I overheard my elders talking about art. I never then deliberately put myself in the way of dissertations on art; but even a child must hear, perforce, the desultory talk which is going on over his head. One of the things which impressed me was this! One must have pictures in the home for pictures are like windows through which one may see nature as in landscapes, or human nature as in figures; all in an ideal light—"the light that never was on sea or land." In winter the spring was there in its tender colors and ingratiating moods. In hot drowsy summer days one could look through a picture frame into an ice gorge or over snowclad fields and frozen streams. The Parian marble figurines would bring Esquimau or Italian dancer into a drab home and the Rogers statuettes would bring romance into drab lives. Man needed idealized nature even as he passed down shady streets in summer or buttoned up his coat against icy blasts as Jack Frost etched his crystalline forests and jungles on the window pane. That was as far as the elders went.

It was not so many years later that I took up the theme where my elders had left it. I saw the man going down the street in summer, hat off and vest apart; or in winter with tightly buttoned coat and cap drawn down over ears; plenty of nature underfoot and overhead but none where the houses straggled and buildings massed themselves in a concerted affront to his sensibilities—displaying nothing to enlist the sympathies and little to quicken the imagination. The smaller structures were like builded boxes; among the larger were specimens of the Mansarded type of Victorian America—mostly ugly masses thrown together and devoid of an expressed structural principle even where classic forms had been imitated in painted pine. I was still young when I felt the insolence of all this

builded pretense and not old when, though dimly at first, I perceived that there was nothing natural about these buildings but that everything was artificial—stupid or fantastic maybe, but always artificial. I felt somehow that nature, the natural, touched with art would not be artificial; nor so distinctly superficial.

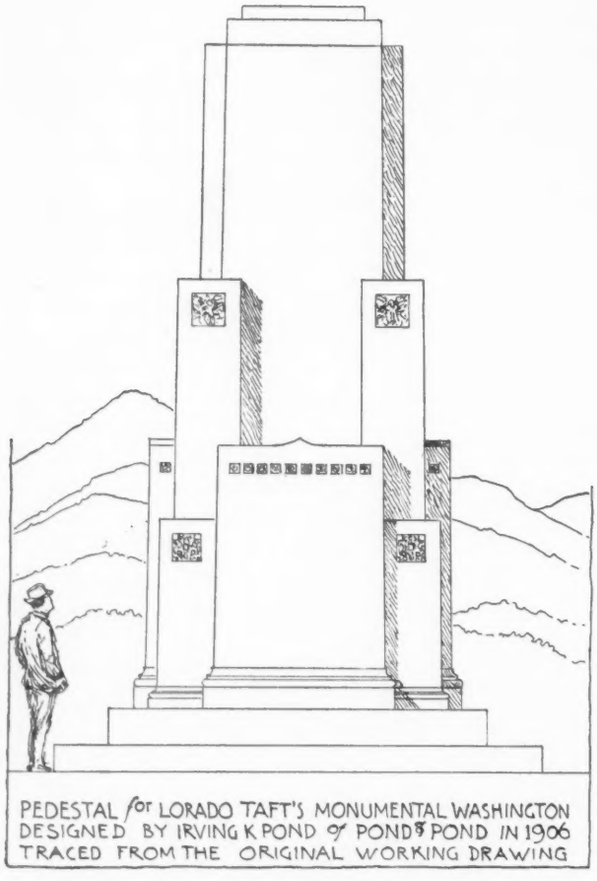
The purpose of art is to effect a reconciliation between man and life; to establish an entente between nature and human nature; to emphasize man's real oneness with nature. This oneness is dimly sensed by many though formulated intellectually by few. (I have wondered if it may not have been sensed, however dimly, by certain Congressmen—with whom I was not entirely out of sympathy—who years ago objected to a proposed desecration of the terrain between the Washington Monument and the Capitol and to having the natural though scraggy oaks replaced with trees resembling little else than huge cubes balanced upon slim upright sticks.) This oneness will become less obscure though none the less mystical as we enlarge in detail upon the subject "How I approach an architectural problem."

However, my first approach must be to *the*, rather than to *an*, architectural problem. When the word architecture came into my conscious vocabulary I wondered just what it meant. I knew that the Greek Temples and the Gothic Cathedrals, which I had then seen only in pictures, were examples of architecture. These I could not relate to the buildings about me, among which, now and then, perhaps, there would be one which would awaken my interest or stir a pleasurable sensation within me. Possibly these latter could be comprehended in a definition of architecture. I sought by a process of elimination to determine if temples, cathedrals, and other buildings had something which could appeal to the basic and natural. I stripped the objects of my study of all extraneous ornament and decoration and left the mass bare. If the mass so disrobed satisfied, I knew that I was in the presence of architecture. When it really satisfied I felt that nothing was to be gained by restoring the ornament—nothing except perhaps the pleasing archeological sensation of recognizing forms which once had lived and functioned. Basic mass and mass relationship, I felt, might well be enriched and defined


LORADO TAFT'S MONUMENTAL WASHINGTON STOOD ON A CONCRETE PEDESTAL OF SIMILAR DESIGN ON THE GROUNDS OF THE SEATTLE EXPOSITION OF 1909. DESIGNED IN 1906 BY IRVING K POND WHO LATER MODIFIED THE DESIGN SLIGHTLY FOR GRANITE AS ABOVE

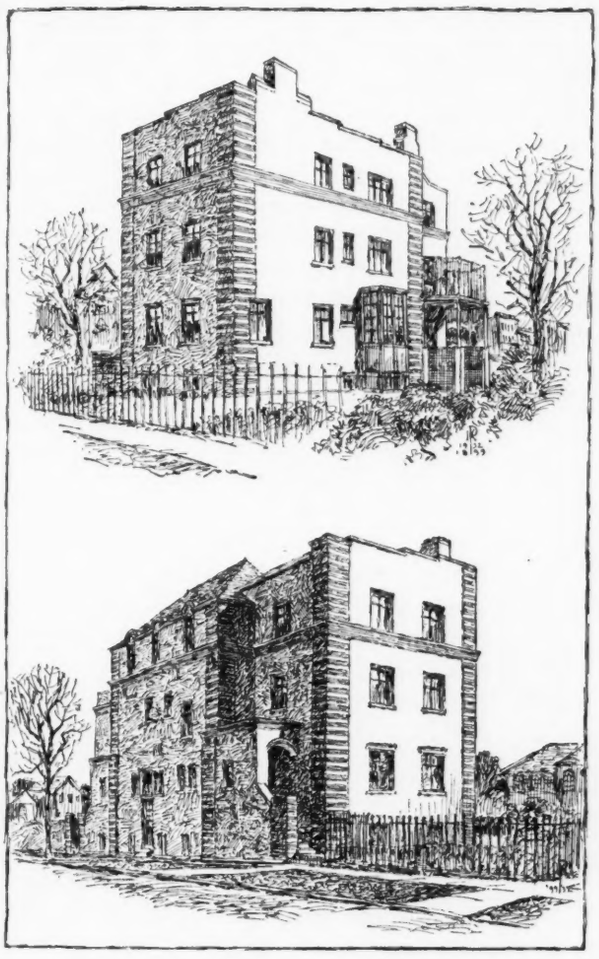
LATER DESIGN, BASE FOR FIGURE OF WASHINGTON

The original pedestal was slightly modified for erection in granite at its permanent location on the campus of the University of Washington.


PEDESTAL for LORADO TAFT'S MONUMENTAL WASHINGTON
DESIGNED BY IRVING K POND of POND & POND IN 1906
TRACED FROM THE ORIGINAL WORKING DRAWING

PEDESTAL DESIGNED BY IRVING K. POND

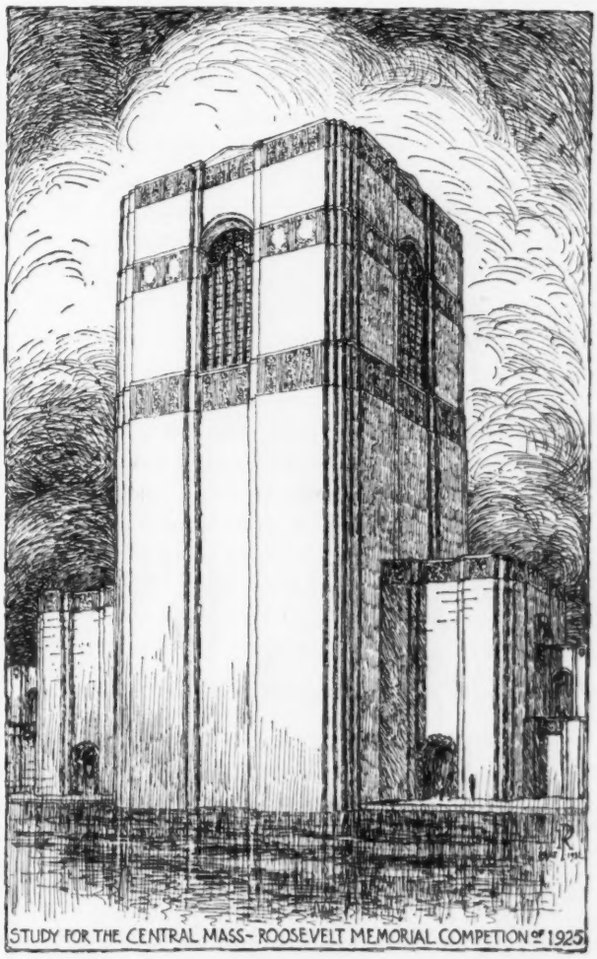
This was designed for Lorado Taft's figure of "Washington with Sword of State," erected temporarily in concrete at the Alaska-Yukon Exposition, held at Seattle in 1909.



DESIGN FOR A RESIDENCE, BY IRVING K. POND
ERECTED IN CHICAGO IN 1898

by a proper ornament intrinsic in the structure *and in the times*. I sought such an ornament and after many laborious years I found what I was seeking; and it has become integral with my philosophy of architecture and of life of which architecture is but a particular phase.

Now as to my approach to *an* architectural problem. Specifically, architecture is to satisfy human needs. Therefore, the plan comes first and until I am satisfied with my development of that factor I pay no heed to the details of third dimensional expression. This does not mean that I come to the plan problem with mind an architectural blank. Experience and study have taught me something and each new problem impinging on my consciousness creates for itself a definite suggestion as to how it shall be solved both as to plan and material embodiment. I do not say plan and elevation; for until working drawings are begun elevation hardly exists for me. I see everything in the round, complete in the three dimensions; so complete that in imagination I can walk around and through the object and view it from all points; and, looking through or into the object, I discern its structure. The mental image grows more and more distinct as I shape and reshape the plan. The plan and the architectural embodiment now are one and to distort either element will be to harm the other. While my mind is developing the plan and building up the form in the third dimension a deep consciousness of nature is stirring within me. I feel the broad solid base upon which the world rests. I see stratifications or laminations change in superficial area and texture as we approach the top, for as yet heavy superimposition of material has not crushed the mass into homogeneity. I see that cataclysmic forces have rent the mass asunder; have elevated this portion and depressed that. I see variety in the natural interplay of form, not stupid monotony; for, to the seeing mind, the action of nature's forces does not tend to create monotony. I feel creative forces at work in the mass, the forces becoming more rare and sublimated as the summit is approached and reached. On the hillside and on the face of the cliff vegetation appears and violets bloom. Even then I cannot feel that nature has finished its job. It has merely created an opportunity for a further and finer development. Therefore, I have accepted this implication and never crown a living structure with a symbol of definite conclusion; only now and then with a suggestion of completion which can be swept away with-



PORTION OF DESIGN SUBMITTED BY IRVING K. POND
COMPETITION FOR ROOSEVELT MEMORIAL, 1925

The essence of this design has appeared since in several monumental buildings.

out harm or much hindrance should the aspiring forces again decide to act.

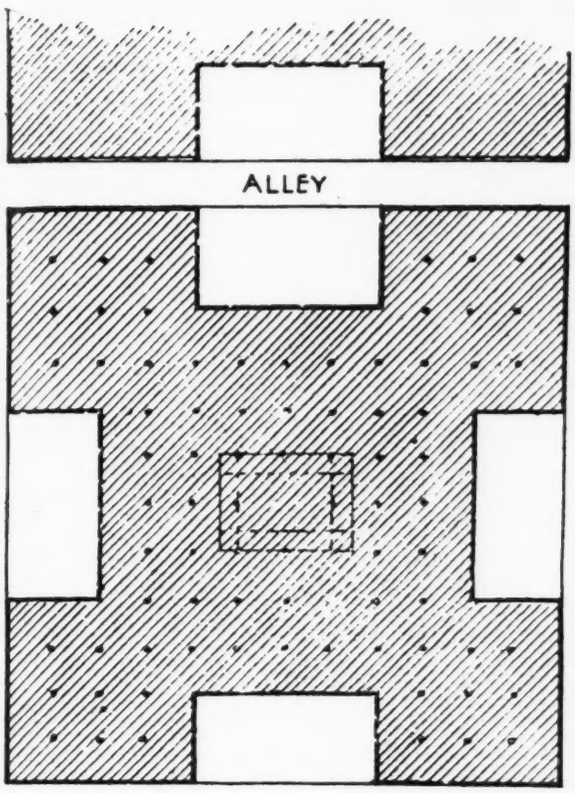
The horizontality of the laminations with which nature marks her structure induces a feeling of strength in repose, and this applies even in case the continuity may have been interrupted by the action of the cataclysmic forces. The forces which displace and shift the laminations of our buildings must be reasoned—reasonable—forces; as all the forces which well up within us and find consummation in art must be reasoned—reasonable—if they are to appeal as other than merely transitory to the mind of civilized man. The tender manifestations on the face of nature, the tree, the shrub, the plant, the flower, to me are symbols of rich and powerful forces in action. Not since my callow days have I used them as building decoration conventionalized into wreath, garland, festoon, or capital. But on—or, better, growing out of—my buildings, erected for the spiritual and material employment of man, is, wherever I may wish for æsthetic effect to emphasize the movement, a symbolized play of structural forces, acting, interacting, and individually developing as they rise; forms which may be translated into a symbol of society as it acts and interacts for the development of its own harmonic relationships and the perfection of the individual. Than this I use and need no other ornament.

Imbued with such sentiments and equipped with a certain amount of crystallized experience I approach an architectural problem sure that I shall get variety as between problems and within problems; for nature has a manifestation which responds to each and every human sentiment and need.

Let not the foregoing be construed into the notion that I visualize natural forms and introduce them of themselves or conventionalized into an architectural composition. I am speaking of sentiment and feeling rather than of forms. I am not sentimental toward nature nor am I sentimental toward my own work. I look at the former empathetically, that is with the power of feeling myself into her forms. I view the latter in the hard, cold light of reason. The only manner in which I, as a human being, differ from and transcend nature generally is in a power of reason which time and circumstance have bestowed upon me. Physically and emotionally, too, I am an integral part of nature. The cosmic forces which vitalize the universe play in me and vitalize my being. I am part of nature and that is why I see beauty in nature; why nature appeals to me. But nature is one thing and architecture, indeed all art, is another. I do not, as I have indicated, incorporate concrete, natural forms into my design nor any idealization of those forms, but seek rather to express in architecture the moods which my mind through my body has read into nature and thus produce or try to produce an architecture in the presence of which I and my fellows may be spiritually comfortable and feel at home. In doing this I deal with abstractions which arise through my contact and oneness with nature rather than copy forms; as architects generally copy forms (ancient, mediæval or modern) from extraneous sources and evolved by others. I am willing to let painter or sculptor transcribe the forms of natural objects, coloring the transcription with the richer or poorer tint of personality as the case may be; but as for me, I must regard architecture not as being transcribed from nature but as an abstraction related to human life because I, the creator, endowed with powers of abstraction and capacity to reason, find in architecture the richest field in which to cultivate and express those deep emotions and sentiments which are inherent in my being as a conscious and integral part of the everlasting and infinite scheme of things. I feel that architecture adds something to nature; that however stupendous nature's manifestations may be, a real work of architecture set down in their midst will impress by the largeness of the feeling with which the artist has imbued it and will seem even more spacious than nature herself.

The feeling for primal nature together with a comprehension of the vital necessities of urban life in the social environment impelled the adoption of the setback principle in the study of a many-storied apartment building. My scheme was to give light and air and garden terraces to the dweller within and let sunlight into neighboring structures. Those ideals were set forth in the text which accompanied the original diagram in an architectural journal in 1898 and reproduced herewith. This study it will be noted antedated by some sixteen years the adoption of the New York City zoning law, the stepback provisions of which were introduced to accomplish this expressed ideal as to light and air. It was some eighteen to twenty years before a building embodying the principle appeared in that environment in form and composition worthy to be called architecture.

In the year 1906 I was called upon by Lorado Taft to design a pedestal for the monumental "Washington with Sword of State," a figure which was almost an abstraction in its splendid mass and austerity of conception. The statue was to be a feature of the Alaska-Yukon Exposition, to be held in Seattle in 1909, and was there erected. As the figure was later to stand permanently upon the Campus of the University near its original site, I elaborated the design slightly for the new location. Both designs are shown herewith. The original design, erected temporarily in concrete, was quite as abstract as was the figure itself. Its form was inspired by the nature of the environment as well as by the character of the subject. The symbol of State standing on high in lofty isolation demanded a base in which an intimate human sympathy and an ideal loftiness should be combined. The everlasting hills climbing and merging into the eternal calm of the mountain must furnish the inspiration. Here—face to face with the highest and most impressive peak of the Coast Range, in the foothills among the people and contemplating Washington in his austere character—here was the opportunity if ever it was to come. Here was no place for Gothic arches or Doric columns. Nothing

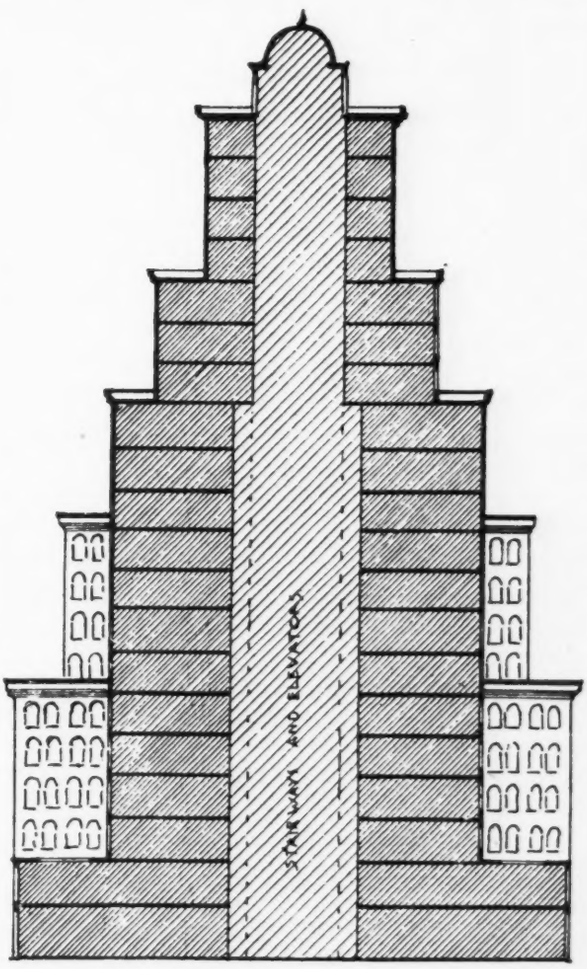


PLAN OF A SET BACK BUILDING
DESIGNED BY IRVING K. POND IN 1898

involved or fanciful could be tolerated; simplicity must control. The shields of the states within the easy range of vision would suggest the human and social; midway between the earth of man and the remote ideal the eagles soared—they might drop lower but could fly no higher. The masses were rounded and softened in their contours by channelings into the stone at the edges. This design was many years ahead of the people for whom it was conceived, as the stepback apartment was many years ahead of its time.

An early effort of mine at designing from nature to human nature is found in a house erected in Chicago in 1899 for the family of an idealistic daughter of a millionaire manufacturer in which was held an ideal of social service and education for the independent functioning of the individual in society. Everything in the house was made direct and simple so that the manual work of the home could be accomplished by the members of the household without drudgery; where the best of cheer should be irradiated and life could be enjoyed. Light came into the house, which was a human shelter and not a hothouse for hybrids, from east, south, and west through normal windows. The north side, devoted to stairs and service features, was given upon its exterior an expression of the more conventional amenities. With its roof and steppings it condescended to be more conventionally urbane. Thus was obtained a variety which did not destroy the elemental harmony.

To give to my structures the semblance of enduring quality so that "nature" might "gladly give them place" it has long been my practice to set back the outer face of exterior walls where there is structural diminution in wall thickness. This gives at the same time a soaring as well as a solid appearance. It has become my established method to produce a natural softening of the masses and a pyramiding effect on vertical walls by the progressively upward elimination of material at the corners; by channelings in the stone as already noted, by the elimination of bricks or half bricks at the corners when the structure is of brick. A simple application of both ideas was made in the design of the City Club of Chicago, a beautiful and characteristic building before it was ruined by the addition of a story, and in a more subtle and complicated



SECTION OF A SET BACK BUILDING
DESIGNED BY IRVING K. POND IN 1898

The drawings shown on this page were published in "The Brickbuilder," in December, 1898, with the following text: "To get air and sunlight into the lower stories of a group of high buildings is a serious problem, and the high building surrounding a court presents the same difficulties. Attempt has been made along the lines suggested in the plan and section. In such a scheme the streets and alleys receive the benefit of direct sunlight, which is in itself an admirable and much to be desired attainment."

PROPOSED UNITED STATES BUILDING AT SHANGHAI, CHINA—BURLINGAME-WARD MEMORIAL

POND AND POND, ARCHITECTS

"The arch, not as decoration but as structure, I use quite freely especially in its more powerful segmental form; for with that form one can relieve horizontality and even merge it by easy transitional movement into verticality."

manner in the tower of the University of Michigan Union building in which the piers run through to the top without interruption and walls are modulated to emphasize the function of verticality as a stimulus to feelings of aspiration and of progressive spiritual development. Horizontality and verticality I have ever sought to keep in proper relationship, letting the one or the other dominate only as befits the character and purpose of the structure. There are needs for horizontality other than mere convenience in superimposing one layer of masonry upon another; and uses for verticality other than that of giving expression to the vertical members of a skeleton frame. This I recognized in my work long ere the skeleton frame had injected its problems.

One use of verticality, even in a structure intrinsically classic, I made in 1925 in a competitive design for the then proposed Roosevelt Memorial near the tidal basin in Washington, D. C. This design, also many and many years in advance of the minds of the "powers that were," fell flat with them though it has appeared in essence in several monumental buildings since. A fragment of that design appears herewith. A similar scheme of vertical massing, held in check by horizontal bands, I had used some years earlier in the low memorial tower of the Purdue Union, though in the Roosevelt design there was more of emphasis on the vertical. I felt this verticality to be necessary in Washington as a foil to the stupid monotony of the present and probably ever to be continued government expression. The desirable play of horizontality in the dominant mass was given by bands in very low relief in the forms of which, however, as is my custom, the ascending movement controlled.

In those early days when it was my practice to strip of all architectural "features" the building I was analyzing that I might determine more readily as to the virtue inhering in the structural mass, I resolved for the fuller expression of verticality to eliminate the cornice, together with all overhanging and applied ornament; and I have been fairly consistent in my effort. The heavy overhang crushes the aspiring spirit and destroys that sense of upward striving which is inherent in human nature and, too, precludes any expression of nature's moods and movement in the building. As the summit is approached it is my conscious effort to lighten the verticals in effect so that in mass and sheer bulk the crown shall not crush out all the joy inherent in aspiration. The arch, not as decoration but as structure, I use quite freely especially in its more powerful segmental form; for with that form one can relieve horizontality and even merge it by easy transitional movement into verticality.

No transition or repose is possible with the modern geometrical, angular and zigzag forms. They are purely artificial, eliciting no emotional response. The zigzag is beautiful as displayed in the instantaneous flash of the lightning. Captured and held in perpetual restraint the form is distressingly ugly. Angular and crystalline forms are lovely only in such variety and delicacy of scale as is seen, for instance, in the

work of the frost and not when they are produced crudely or structurally by the artifice of man. But I care not herein to deal with details of applied ornament; I am concerned rather with the underlying philosophy which colors my attitude toward my work.

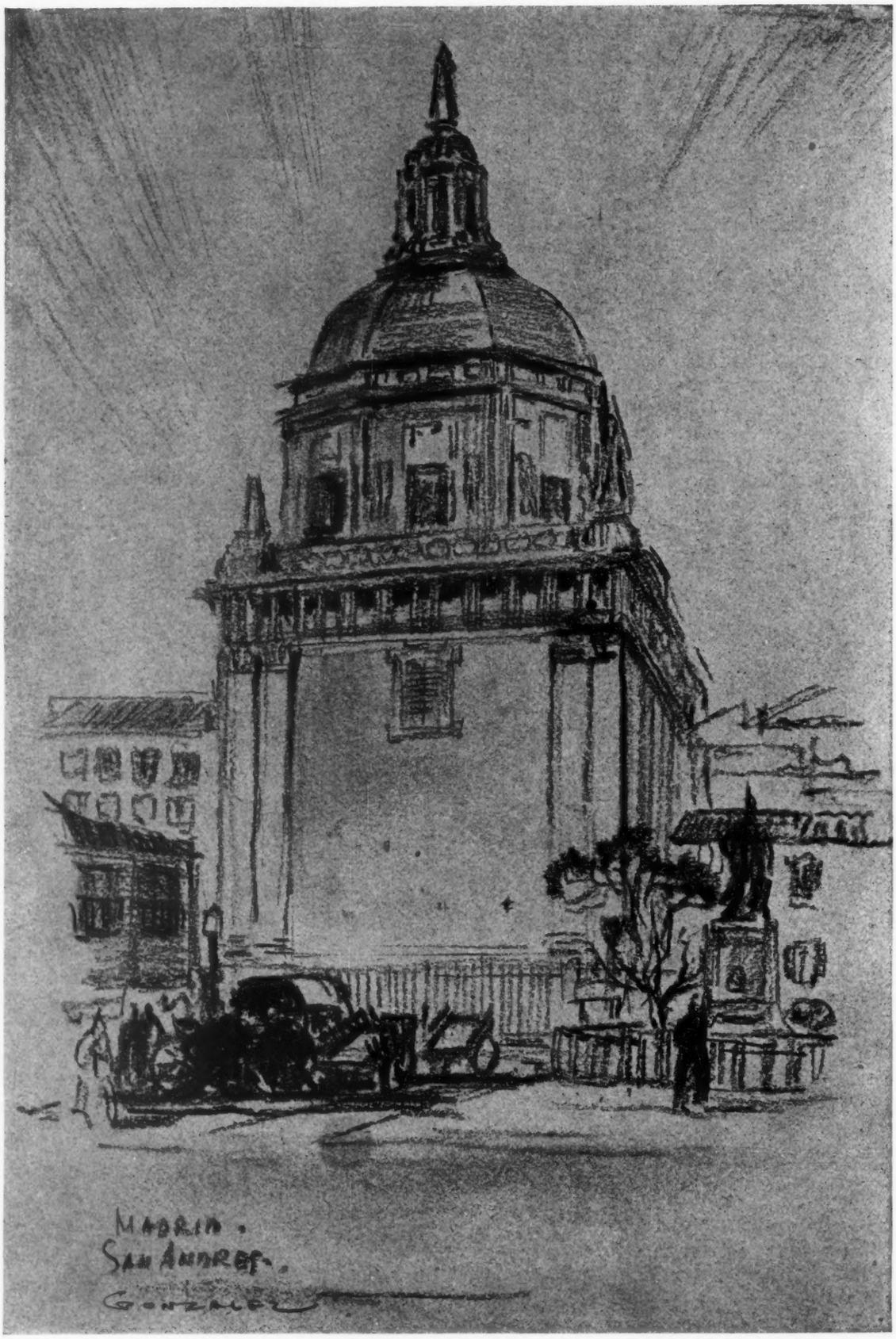
So then, to sum up: I approach my architectural problem with a mind imbued with a sense of the elemental and eternal and with a will to give it expression. Not with a mental storehouse filled with acres of piled up glass, miles of drawn wire or flimsy, glittering metal shapes which I must dispose in some grotesque manner; nor with a mental back yard cluttered up with millions of columns, caps, and bases which must be set up on somebody's good lot or I perish; nor with an attic filled to overflowing with cartouches, shields, heraldic emblems, Gothic cusps and pinnacles and saints ripe for the dust bin. Not impeded by all this lumber do I effect my approach, but with a mental dome stored with lovely and powerful impressions of nature (some may consider this an empty space but I hear no reverberations!); with a back yard planted to lovely flowers and sustaining fruits and vegetables (some may miss the balustrades and borders of clipped trees but I am satisfied!); and with an attic dusted and clean and furnished as a playroom for young thoughts and budding ideas and fancies. (Some would furnish the attic as a billiard room with a bar but I am satisfied to have it as it is!) With this very natural and altogether unspectacular equipment, unburdened by the flashy and ephemeral though buoyed by the reasonable, the eternal, do I approach an architectural problem and life itself.

(To be certain that in writing the above I was not coloring my early ideals with the tints of later year lenses, I looked through the files of my writings and there I came continually upon references to nature as a source of inspiration, beginning with my first paper before the Chicago Architectural Sketch Club in the initial period of its existence—nearly fifty years ago—when I advised my fellow draftsmen to seek that plentiful source for expression of mood and play and interplay of mass. The effect of climate and the physical contours of the Earth upon human psychology, and consequently upon architectural forms, was set forth quite fully in text and illustration in my book, *The Meaning of Architecture*, published in 1918.)

POND & POND ARCHITECTS CHICAGO ILL.
PROPOSED "UNITED STATES BUILDING" AT SHANGHAI CHINA "BURLINGAME-WARD MEMORIAL" THE RIVER FRONT

ANOTHER PERSPECTIVE OF PROPOSED BUILDING SHOWN OPPOSITE

The building was designed by Pond and Pond, Architects, early in 1914, but given a quietus by the opening of the World War. The building was to be done in local brick and Chinese glazed tile. In its stepback and vertical treatment it presented what was then a novel and altogether modern aspect.



FROM A CHARCOAL SKETCH ON GRAY PAPER—BY GUILLERMO GONZALEZ

SAN ANDRES, MADRID

Further Thoughts on Contemporary Architecture

By William Adams Delano

Editor's Note:—*This article is being reprinted at the author's request from the May, 1932, issue of "Shelter," in which it appeared under the title "At a General Trend."*

While still in Paris, the February issue of the *T-Square Journal* was forwarded to me. Its receipt reminded me that for over a year you have been asking me and I have been promising to write an article for its pages. Writing is a form of expression which does not come easily to me and I have procrastinated. Now on my way home I have found time, not only to read the Journal from cover to cover, but to reflect, and the memory of what I have seen in European cities and what I have just read have created such conflicting emotions that, in spite of myself, I feel compelled to write the long promised article.

The advanced ideas presented in that issue are only typical of hundreds which appear in newspapers and architectural magazines. Anything I may write, therefore, is not directed at the *Journal* particularly but at a general trend.

On my trip I visited London, Paris, and Rome and the two things which struck me most forcibly in all of these cities were: first, the way in which the great monuments, the spiritual expressions of the people, stood out—raised their heads above their surroundings—and secondly, how much light and air there was in these cities with their lower buildings and open squares and parks. Coming from New York, where I crawl in shadow from place to place feeling like a worm, I began to hold up my head, and once more felt like a human being. These qualities, if they have such an effect upon a stranger, surely must have an unconscious one upon the mentality of the natives. In Rome especially I was struck more than ever before by the importance in which man held himself, as expressed in brick and stone—a selfish expression, perhaps, but one so grandiose that man and his works almost reach the sublime. No "eleven foot six floor to floor" height for the Roman: he thought so well of himself that no building was too big, no ceiling too high, no decoration too magnificent to suit his purpose.

Still seething with these impressions of man's dignity as expressed in his material surroundings, I took up the *Journal* and read how much happier in the new era now dawning man would be—living in skyscraping standardized apartment houses, each apartment reduced to the minimum, and spaced equally between standardized gardens, or how much more contented living in sanitary, machine-made homes which, when shabby, he could scrap, together with his Ford car, along the roadsides of Long Island. After centuries of struggle to evolve a culture worthy of his position in the animal kingdom, is this to be man's end? No better, no worse than the insects—ants and caterpillars he thought he had out-distanced in the race? I wonder??

Anyone with eyes in his head and a sense of justice in his heart cannot fail to be stirred when he sees the slums of the great cities. No matter what the cost to Capital, these must be wiped out or our civilization is not worthy of the name, but is the remedy only to be found in condemning mankind to live in standardized beehives and ant hills? Cannot more of the "advanced" architectural thought be spent, now that we have improved and improving methods of transportation, upon the idea of growing horizontally rather than vertically, or is that not spectacular enough? Five or six years ago the Regional Plan of New York and Its Environs was responsible for the statement that if New York City were built at an even level—the high buildings reduced and buildings erected only on unimproved land reserved for building—Manhattan Island would be but four and one-half stories high. I do not know what the average height limit would be today but I feel confident not so high as the six and one-half story average of Paris. We must face the fact that the skyscraper, America's contribution to architecture—wonderful as it is—has become an intolerable nuisance for which the greed of the landowner, our absurd system of taxing real estate and our lack of consideration for the rights of the other fellow are responsible. Whatever the inconveniences and drawbacks of an extended city as opposed to a concentrated one, man would not be so utterly out of scale with his surroundings; he would not become a caterpillar with a caterpillar's mentality.

It is probably too late to save New York City. Even today we are plunging ahead with our eyes shut, and building such colossal pieces of imaginative (or had I better say unimaginative) folly as Radio City. If this group of buildings were the most efficient and beautiful in the world it would still be folly to erect it on its present site, for its very size tends to shrink the capacity of the city and add to its inconvenience.

I fear that what I am writing will fall on deaf ears; it is but a parting shot at this mechanical civilization which seems to be advancing as surely and relentlessly as the ocean tide. What the so-called "Modern" Architects say—and they are very articu-

late—and the pictures they paint—and they are very alluring—is news and is given a publicity out of all proportion to the value of the thought contained. Almost never has what they propose been thought out with any more reference to the nature and dignity of man than was the 18th Amendment by our legislators. With our magazines and newspapers what they are today this is inevitable—there is no news value in the old, only in the new and spectacular—but it seems to me that those of us who are not carried off our feet by this "ballyhoo," who are sincerely convinced that we are drifting toward a condition where humanity is threatened by the machine and its liberty jeopardized, owe it to our fellow citizens and our profession to speak out.

It would require much space to go into a discussion of the kind of thing this modern architectural thought is producing; besides, while the fever is on it would be futile. For all its much-vaunted "functional" originality, it is but a poor copy of what is being done better abroad. Monotonous stripes are substituted for monotonous columns. I see no greater artistic value in copying something that was done yesterday than something that was done two centuries ago. Are we not deceiving ourselves? By jettisoning all the old forms we do not necessarily produce something original or worth while. There is as much that is new to be said in architecture today by a man of imagination who employs traditional motives as there is in literature by the author, who, to express his thought, still employs the English language. Where we have most often gone astray in this country is in slavishly copying what our European ancestors have done instead of telling our own story in our own way. We are "sick to death" of the conventional styles and in our anger want to throw everything overboard. It is not imagination, but lack of imagination which brings us to this pass.

It is fun to dream dreams, and I am sure that those who indulge the habit are having a wonderful time today, with all the publicity that is being showered upon them. Without dreams the world would not progress, but could not some of this "advance" dreaming be directed towards a civilization which conceived of men as individuals? This has always been America's boast. Must we follow blindly Russia's leveling experiment before it has been more fully tested? The skyscraper has gone to our heads. Instead let us take to our hearts the lesson of the great American "bubble" of mass production, and mass everything, which has so recently been pricked, and as architects give less thought to material bigness and more to the dignity of human life and thought and its power to shape man's destiny.

UNITED STATES EMBASSY, PARIS, FRANCE—DELANO AND ALDRICH, ARCHITECTS

FROM A PENCIL RENDERING BY SCHELL LEWIS

Factors Frequently Overlooked in Planning Houses

By Arthur Bates Lincoln

Working with free flowing pencil over the drawing board limited to two dimensions, areas may be stretched at will, while the third dimension is but dimly sensed as a hazard. Transposed in construction of the building to concrete materials and very definite dimension limitations, any careless disregard of the fundamental law that two objects cannot occupy the same space at one time will bring to the architect embarrassing punishment.

It is the favorite assertion of the architect, when talking with a layman, that a home builder who will turn to his profession for advice and counsel in the preparation of the plans and specifications for a new house will be saved all trouble and disappointment. He sets up such service as a guarantee that the house will be one which can be accepted without regrets.

Let us not be too insistent upon our perfection. Behind the scenes, as it were, it should be permissible to recall instances where a house plan has developed faults, even though they be listed as items which were overlooked to save professional blushes. No one can expect to be perfect, and if we register a high average that is as much as anyone should expect. Above all we should not seek to forget these possibly unfortunate experiences, since their recital may serve to help others.

Mistakes of Commission

First there are errors of commission in the preparation of the plans. The primary cause for trouble of this nature is the disturbing faculty possessed by many an owner or client for changing his mind after the drawings have been completed. Even the slightest change in one drawing makes the task of checking back and finding every item which must be corrected to meet revised conditions, a task worthy of a Sherlock Holmes. Yet the client is the man who is paying the bills, and is certainly entitled to change his mind if he is equally willing to pay the cost of so doing.

There is a marked difference in tempo between the concentrated drive in an architect's office while plans are being completed under pressure, and the more leisurely period during which the house is under construction. It is easy to forget, at the later date, the rush with which the job was turned out, possibly with two or three draftsmen working upon the drawings for the one house. It is surprising that hurried checking of drawings under such circumstances does not result in more frequent oversights than is the case.

The most annoying errors are those which result from ignorance or lack of experience upon the part of some draftsman. The architect is not without fault. A drawing as important as a cross section, for instance, will often be prepared by the office boy as "experience." The architect may find, much later, that he is the one to undergo the experience, when he discovers that the embryo draftsman laid out the section with the ceiling heights six inches higher than designated on other drawings. The space wherein a cherished scheme for an effective interior treatment may have been laid out will thus prove to be greater on the drawing than conditions at the building afford.

Faults of Omission

Little more need be said of these. We recognize their existence, and guard against them as best we may. It is with the sins of omission, those errors in judgment which rise up most fiendishly to mock us, that we are concerned. Strange as it may seem, the mistake upon a set of plans which is so serious that it will stop a job, if indeed it has not been called to the attention of the architect during the earlier period while bids were being received, frequently has less serious effect than the little detail which is overlooked until too late to do anything about it. In the first instance the correction will be worked out and any disadvantage in deviation from the original scheme discounted. The minor item, like the minute cinder in the eyeball which causes physical distress entirely out of proportion to its size, prevents the sensitive soul of the architect from finding complete satisfaction in the final development of his brain child.

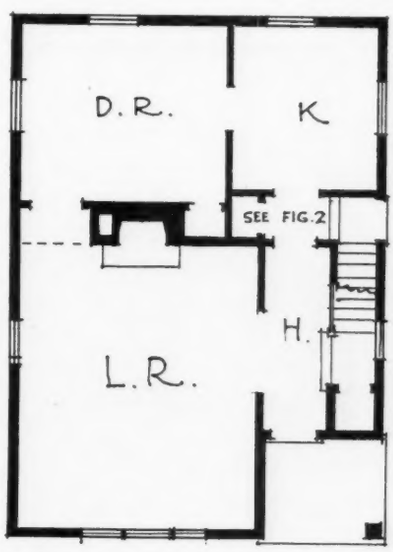


FIGURE 1

Effort at a compact plan, which in one particular developed as a cramped plan.

Much of the fault in planning may be traced to inadequate appreciation of floor area limitations. It is only after a prolonged experience, watching structures grow up from the plan on paper to the wood and plaster of actual construction, that sense of values in space requirements is attained. Before we earn even limited spurs, how desperately we labor to save every inch, striving for the

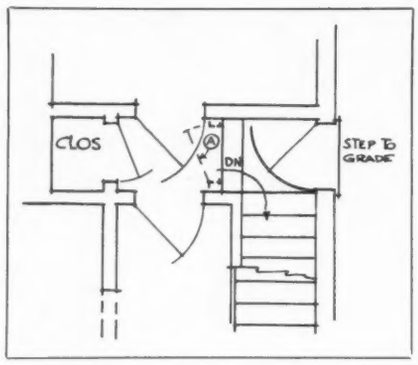


FIGURE 2

Cramped service entrance under low sloping stair soffit. The two doors at front and back fail to close off the cellar in practice, because of the inconvenience of keeping them closed against constant circulation. Elimination of door to kitchen, and new door at A proves very awkward when using service entrance or cellar stair.

COMPACT plan, only to discover after the structure has been erected, that what we have brought into being has been the CRAMPED house.

Cramped Floor Area

If the writer may be pardoned for citing personalities, one of the early difficulties of this nature which he encountered, and one which he will have little opportunity of forgetting, appeared in the house which he built for his own family. On the plan of the first floor, space devoted to the service entrance and to the stair leading up from the cellar was located between the hall and the kitchen. Hail to economical planning, only a three-foot section need be taken from the depth of the house, assuring a spacious stair hall and a comfortable kitchen. Also there will be two doors separating the kitchen from the front of the house; that surely is taken from the copy book!

Alas, what does the housewife, in this case my wife, find when she moves in to occupy this castle in Spain, translated into materials of definite substance and limited dimension? There is no door to shut off the cellar stairs! The requisite function is accomplished, I try to point out, by keeping the two doors closed. It is a theory which falls down in practice, however, for with modern efficiency of cooking appliances it is not necessary to shut away the kitchen as of yore, and when the cook and housewife happens to be the mother of an active group of children, she has no time to be continually closing those doors. Hence they are usually left open.

Nor can the problem be solved, as I thought to do in a similar circumstance of a later project, by placing a door at the top of the steps leading down to the service entrance landing. Even with the elimination of the door leading into the kitchen, made possible by such a change, the conflict of swinging doors becomes exasperating. The sloping soffit of a stairway overhead, leading up to the second floor, prohibits placing a door on the landing at the top of the direct run from the cellar.

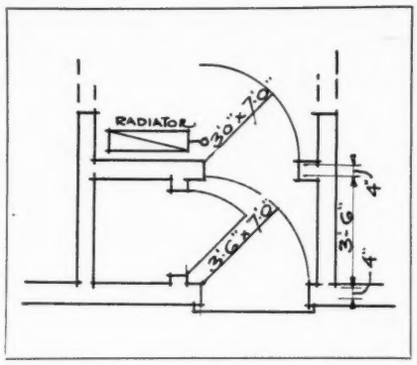


FIGURE 3

A door 3'-6" wide cannot swing clear back into a vestibule which measures 3'-6" from stud to stud. A radiator has usurped the clear wall space intended for swinging back the inner door, compelling it to project awkwardly into the hall when standing open. The radiator valve will continually impede full opening of door.

A very common annoyance, illustrated in Figure 3, results from inattention to door swings. The entrance vestibule, for instance, may be so shallow that the door cannot be opened wide without scraping against the inner partition wall. The inner door will also be provocative of petty annoyance if a radiator is carelessly shown against the wall where the door should fold back, for the door can then only be opened out into the hall. It will be fortunate if the radiator valves do not crowd the door, preventing it from clearing the full width of the opening.

Garages have arrived as important claimants for space in the present-day house plan. When incorporated in the house they will sometimes appear as wings, which must be kept in suitable scale. Watch the doors on a shallow garage; they will frequently swing into the space needed for the car, sometimes to such an extent that the door cannot be closed after the auto is housed, unless it be a very small one. If the doors are to be rolled overhead, there must be sufficient clear space above the door soffit or lintel.

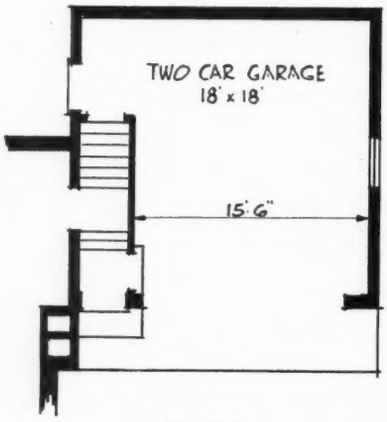


FIGURE 4

A two-car garage measuring 18'-0" by 18'-0" is none too roomy, and when a stair is unexpectedly introduced to utilize space overhead, the remaining floor area will only be large enough for one car. Doors also must swing out or roll up.

A floor space sufficient for two cars is frequently demanded and it is probably advisable today to make such provision, even though not specifically requested, when space limitations will permit. Beware the encroachment of extraneous items, such as a stair leading to the space over the garage ceiling. This, as in Figure 4, may reduce floor area which as dimensioned looks ample for two cars, so that it will actually contain but one car of real size, with a balance sufficient possibly for the kiddie cars of the children.

Remember the Third Dimension

The plan in Figure 5 looks innocent enough, what can be the

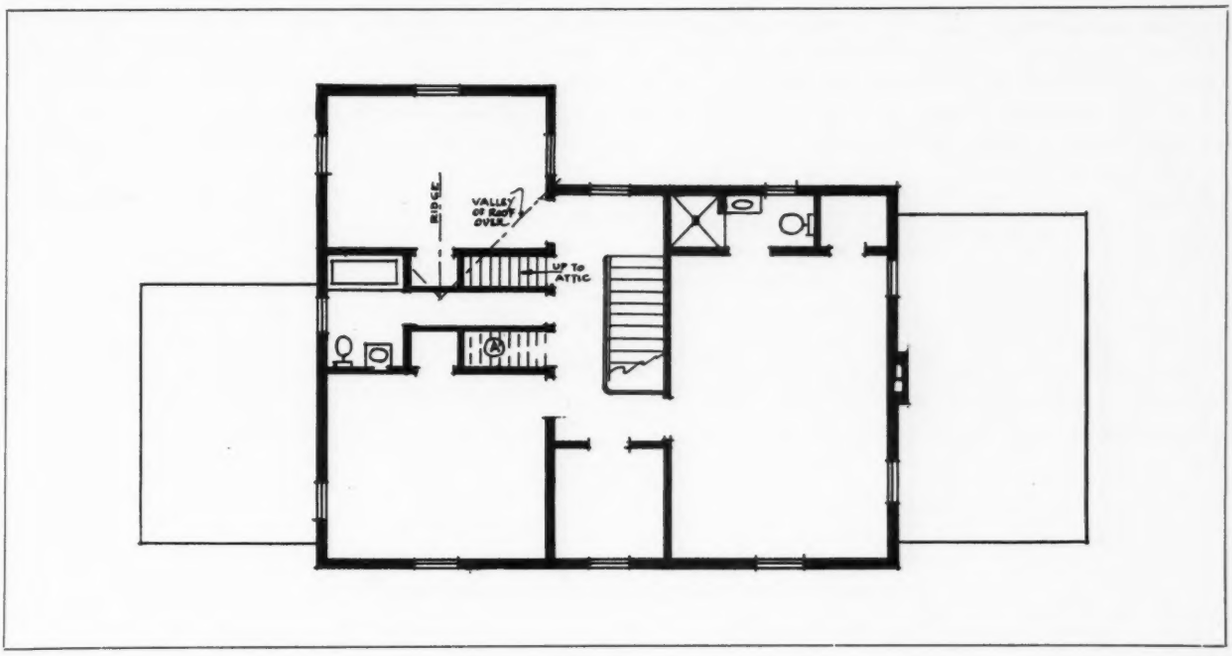


FIGURE 5

This second floor plan was entirely feasible with the attic stair at A, *but when said stair was shifted to position further back on working drawings, trouble developed on the job. The roof valley had to be cut and dormer built up to provide headroom.*

trouble here? It is the hazard of inadequate headroom over stairways, which ever lurks in the background to trap the unwary. The danger is repeatedly stressed in school and atelier, as well as office, but eventually there comes a day when, in the rush to make requested changes and turn out a plan which has at last received the approval of the owner, this fault creeps in unnoticed to plague the architect.

Plans are necessarily laid out on paper in two dimensions. When one starts to climb stairs above the plane of the floor, a weather eye must be kept out for trouble overhead. The stair in this plan tried to bump the owner's head against the roof, and would have succeeded had not the builder permitted it to burst through the restraining bounds of the roof. It was covered with a dormer, which by no feat of legerdemain could, at such late date, be explained satisfactorily. The experience was the more bitter to the architect, because the stair was originally and safely located at "A."

Less serious difficulties of this same nature bob up with frequency when doors seven feet in height fail to fit under stair soffits where there is only six feet. At other times, doors may swing with a crash against some sloping plaster soffit, considerably reducing the effective width of the opening to say nothing of the feeling of importance of the architect when the client asks, "how come?"

It is not so serious when doors in such difficulties serve unimportant closets, but when they are supposed to afford access from kitchen to entrance hall, and available height would compel crawling upon hands and knees, the architect finds himself in desperate need of an alibi. Such difficulties would be avoided if a sufficient number of sections were drawn to focus attention on such pitfalls. Granted; but we are discussing work for that clientele which does not believe it can afford to pay an ample fee for such preliminaries. The architect must depend upon his sense for the third dimension, while working over his drafting board in but two. Cramped plans usually breed cramped stairways; look out for them.

Open stairwells have a most disconcerting way of landing an unexpected blow below the belt. A charmingly proportioned stair hall on the upper floor, the well protected by a graceful railing, may be host to a "Frankenstein" in the shape of a partition soaring up from the floor below. Demands for efficient use of every inch of space may have pushed this out of bounds, and few things look more incongruous than the attempt to top off such a partition if it proves impossible to force it back under the platform or soffit of the stair.

Natural lighting is one of the requisites of a stairway; hence into every plan, where possible, should go a window. Perhaps during the next week the particular elevation wherein that window occurs may be roughed out—all window heads at a uniform level. Where is this window when the house rises in its three dimensions? The architect will be fortunate indeed if it is not too far above the level of the stair landing for the latch to be reached; let's not mention

the task of cleaning. Still, this is not so awkward as the window which is so placed that the run of the stair crosses the opening, for such oversight can seldom be entirely concealed from the wondering eye of the passing stranger in the world outside.

Condensing stair runs on plan so that the space available cannot be negotiated safely is an accusation often brought against the speculative builder, but no architect should be so reckless of the convenience and safety of his clients. The cross-section drawing, taken through the house in such a way that the stair may be laid out upon it, is very well worth the effort.

Bedrooms are primarily intended to receive one or two beds. Bromidic? Possibly, yet I have seen many plans—and houses, too, for that matter—where a room thus designated proved to be too cramped to contain a bed. I recall a prize winning house plan wherein one bedroom had not a clear wall space for a bed. It was conveniently designated a nursery, but families do not continue indefinitely to grow babies, and young children soon reach the stage where they require, and in these days demand, better furnishings for the room assigned to them.

Any darn fool can make an elaborate house plan which will contain all of the features requested by present-day clients. Only from the crucible of experience can come the knowledge to produce the house suitable for every requisite within budget limitations, while still creating the desirable feeling of spaciousness and avoiding the hidden pitfalls here enumerated.

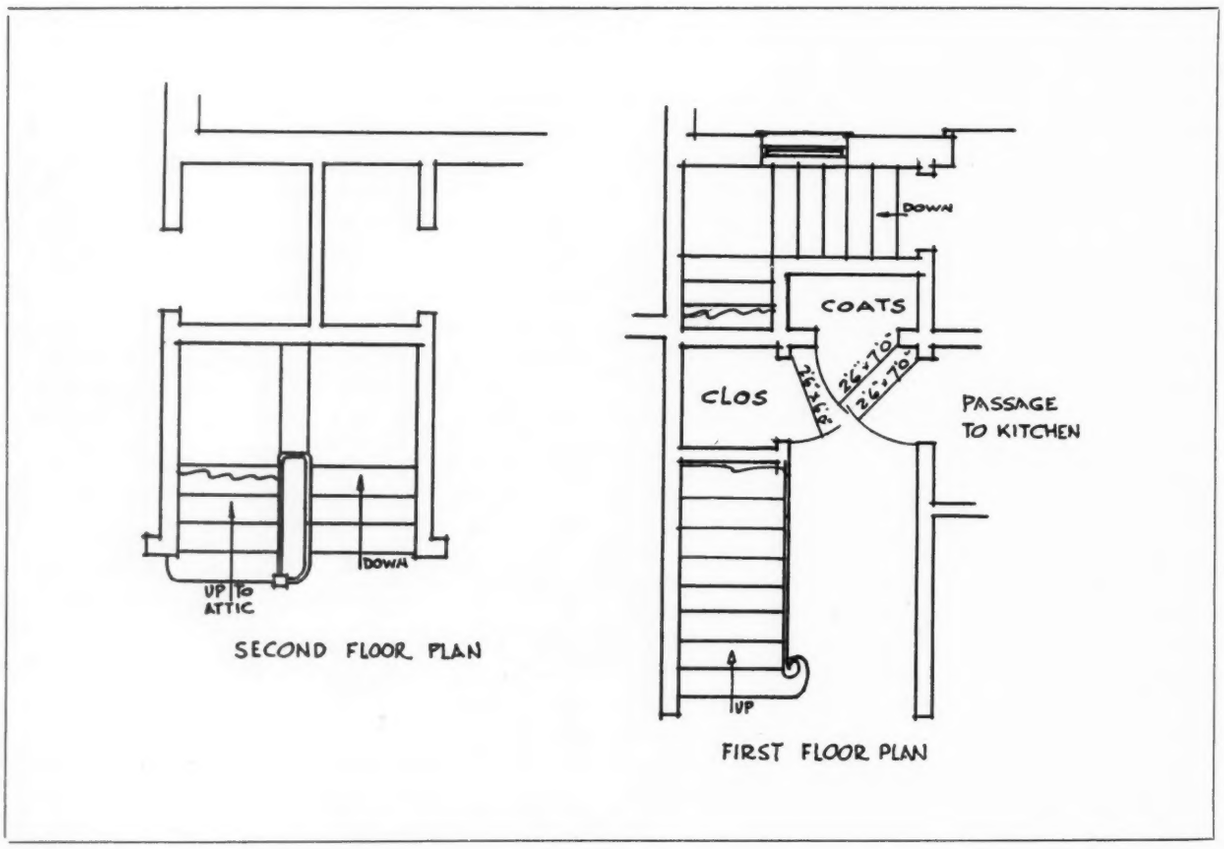
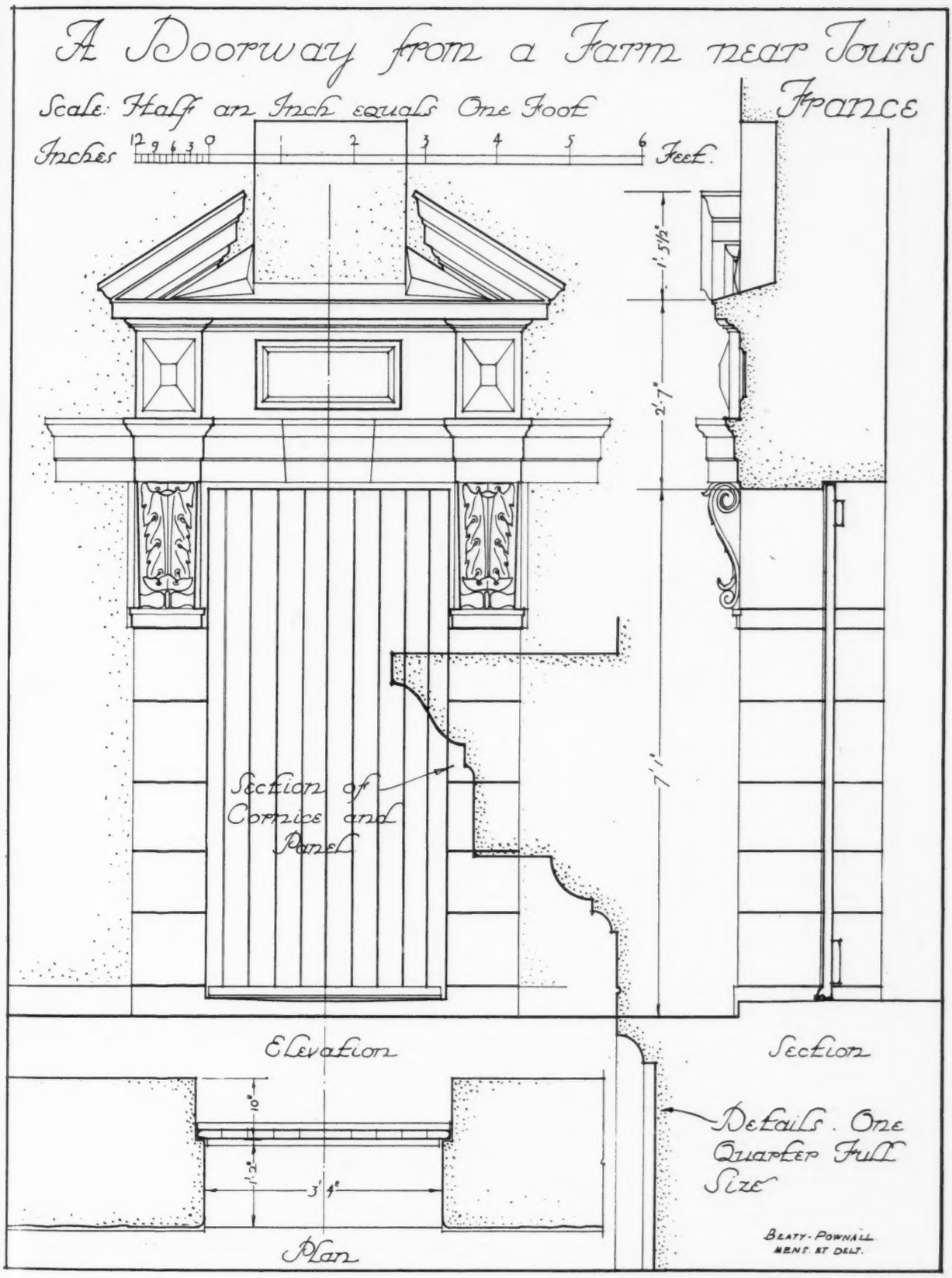
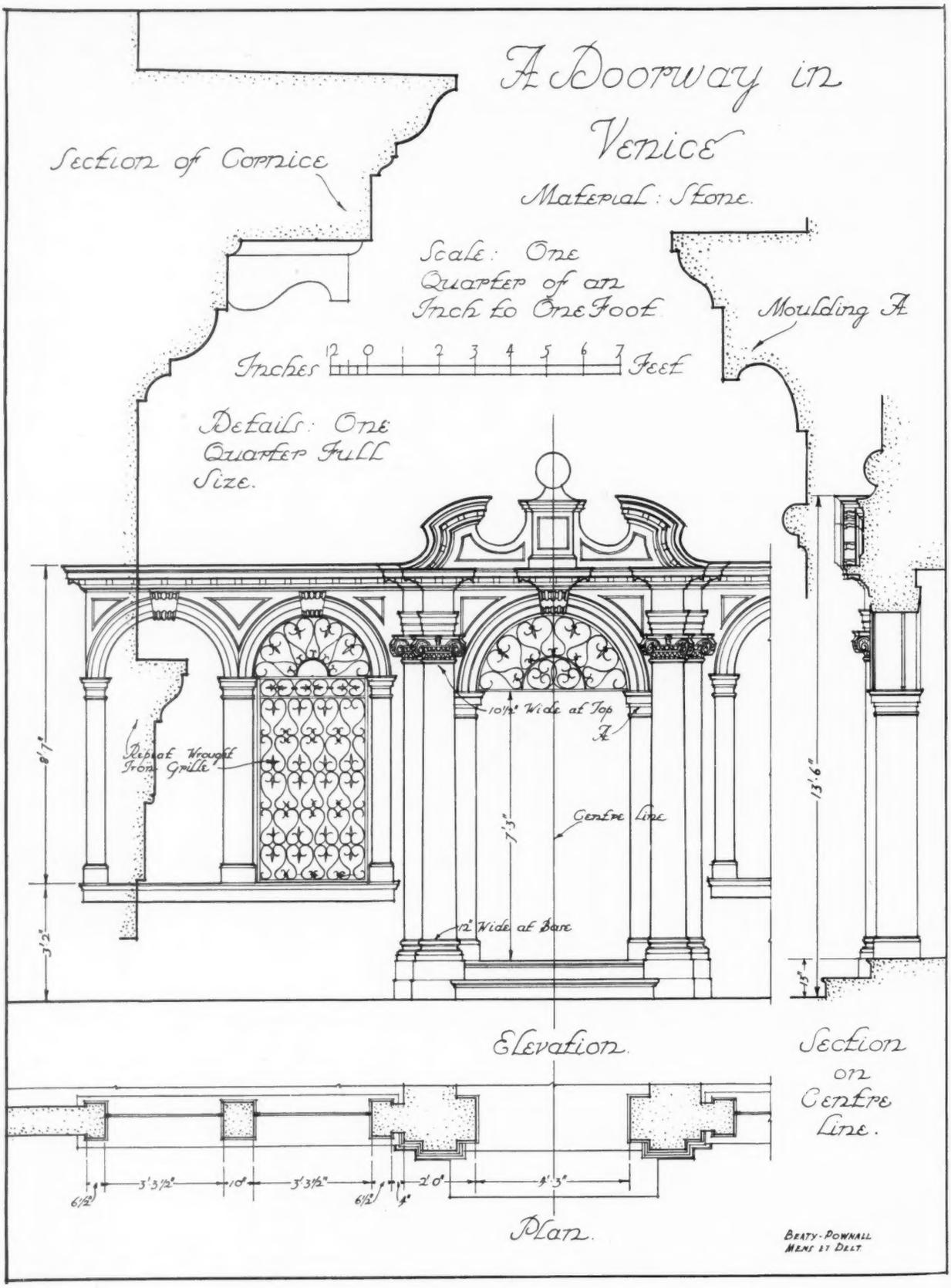


FIGURE 6

A cramped stair is indefensible, but it accompanies most attempts at the super-compact plan. In this first floor plan a hint of trouble to come might have been vouchsafed the architect, if the stair risers and open well to the second floor had been dotted in. Several months after the floors have been framed it is discovered that the clear headroom under the stair platform is but 6'-6", making the doors much too high. The tight stairway as shown on the second floor plan is a trouble breeder in both construction and design, and should be avoided if possible.



MEASURED AND DRAWN BY WILLIAM BEATY-POWNALL



MEASURED AND DRAWN BY WILLIAM BEATY-POWNALL

Pencil Points Series of Color Plates

Mr. Bailey's first consideration of a subject is in reference to composition—the placing of the subject within the area of his paper. His preference is for placing the chief element of the subject off center (to avoid a symmetrical arrangement)—since this for him provides a more interesting result. Thus in this English room he has placed the mantel slightly to the right of the middle of the picture area.

Having decided on the angle point of view, Mr. Bailey quickly establishes the arrangement on his paper by light and freely indicated pencil lines, making no attempt to draw the various elements in detail, but merely placing their relative locations. This is rarely a matter of more than fifteen or twenty minutes.

With color box held on thumb of left hand and water color block held by left hand, he proceeds to apply the color.

Usually it is his practice to lay in the yellows (and yellow ochre he finds most useful), proceeding to other colors and darker tones. He finds Fabriano medium surface, heavyweight paper excellent, but gives it no preliminary wetting. Instead he charges fully his brushes and applies them with directness and breadth, oftentimes completing the entire subject with one brush of large size. Selecting brushes from a number of varying sizes consumes valuable time that Mr. Bailey regards better employed in proceeding with no cessation to the completion of his subject. Mr. Bailey completes each drawing in one sitting, as he finds it is quite impossible to regain the same mood following an intermission in his work, which tends to cause the water color not to hold together as a united effort. The original of this drawing measures 18" x 22".

AN INTERIOR IN THE GALLERIES OF FRENCH AND COMPANY, INC.

FROM A WATER COLOR BY VERNON HOWE BAILEY

PENCIL POINTS
(July, 1932)

The New Par—Intensive Conservation Comes to America

Understanding the Construction Industry's Newest Problem

By Morgan Dudley E. Hite

In the beginning let me quote from a report of a national survey which I recently made. This will provide the background for the new idea which has imbedded in it the possibility of reviving building construction activities on a scale *that will mean something* to building trades mechanics, manufacturers, the railroads, dealers, architects, and the entire network that is embraced by it. My report, if you don't mind:

"There is disclosed the real situation existing in the cities. In all of them there is ample rentable space available—houses, apartments, offices, commercial. There is no shortage of any kind of space —except *good* space. Ten years ago the situation was diametrically the reverse of this: there was no space at all available, good or bad. Even the most dilapidated dumps were in demand—then. It is all different now. Only well-kept places get the public's preference. Dilapidated and down-at-heels buildings are going from bad to worse.

"New building is proceeding slowly, but not enough to equal the absorption of vacancies, so that it may be stated that existing space is being gradually eaten into: but too snail-like to be of any benefit to the situation. In consequence old buildings are drifting backward swiftly in public esteem, and consequently in value. Manhattan is in the same boat with the rest of the nation.

"There is, however, a real demand for the best. Location still attracts. Well-located old properties are being considered from a new angle. Thought is turning toward the salvaging of old buildings erected many years ago. These are becoming obsolescent. This is slowly unfolding a modernizing movement which will have important consequences later."

* * * * *

"The speculative builder cannot at present show the lending agencies—capital—that there is a public need or market for his product, and he is therefore deprived of funds. This is notably so in some of the very largest cities. Judging from the amount of unrented space now on hand he will be out of the market for some time, in the field of *new* construction. If the speculative builder is heard from soon it will no doubt be in the rising field of *modernizing* work in which he is apt to see opportunities at an early date. Capital for this will probably be available to him at once.

"There are thousands of sites—now built upon—which can *never* be duplicated for location value. This offers a new and extensive field for building operations that only require proper local or community organization combined with private business initiative (which should be paramount if the movement is to be helpful and productive and thoroughly economic)."

* * * * *

The original modernizing movement which was inaugurated inopportunely a few years ago at a time when the country was in the midst of an enthusiastic building program has evolved itself, as things are prone to do, into something else—something much more economic and advanced. This nation has always in the past been *new-building* minded—but a change in this traditional attitude seems to be impending, for the country as a whole.

Because modernization holds a hope for many branches of the building industry which are suffering from the lapse of new building construction, the subject has been taken in hand by some keen minds within those industries. Notable among these is the stimulating analytical approach by Fenton B. Turck, vice-president of American Radiator and Standard Sanitary Manufacturing Company, and that of C. E. Stedman, formerly vice-president in charge of sales for The Celotex Company, now president of Building Improvements, Inc., and others who are examining the current economic riddle.

The United States Chamber of Commerce, through F. Stuart Fitzpatrick, Director of the Civic Development Department, has begun an intensive study of the question. A forthcoming national conference is now being programmed by the Federal Government, also.

Rebuilt homes and other buildings, salvaged properties, the restoration of blighted streets and areas in cities, the turning away from a non-existent new-building market to a new intensity in connection with the improvement in every possible way of existing structures, is offered as the single important outlet for materials and building workers—to take the place of a steadily slackening volume of new construction activities.

What has held back modernizing, then? Two things, mainly: Americans are still new-building minded, as I have said. And there is distinctly *absent*

any proper technical organization for *producing* the average modernizing job.

The building materials exist in plenitude, the men are at hand—there is greater unemployment in the building trades than in any other field—and the financing of operations has shaped up properly. But no organizations compatible with the possibilities have yet been brought into being for the conduct of a modernizing job from the moment it emanates in the vague form of a desire on the part of an owner of a home, say, until it is carried through as a completed piece of work. The nation has not been organized on a business basis, heretofore, to handle construction work *in spoonfuls*, as it were. And remodeling and alterations and modernization individually come under that heading, although in the aggregate the volume of modernizing work to be done—on fifteen million buildings—would require twenty years full-time operating of the productive facilities of the entire construction group.

At present, under the system which has hitherto prevailed for carrying on new construction work, there are several separate elements: The *architect*, who is fully qualified to put the initial ideas into shape, but who will not undertake the contract work. That is not his function—in America; although he does so in Latin America and on the Continent. The *contractor*, who can assume the contract obligation, but who has no facilities for the essential preliminary designing and planning and development of the ideas of the owner. Neither of these therefore is prepared to offer a complete service. The *manufacturers* of the diversified products which go into a building are barren of any facilities for cooperation beyond furnishing their products, nor is it their function to engage in building operations. The *dealer* who distributes the extensive line of materials is not equipped with technical knowledge or experience for carrying on a job of "assembling" a finished modernization job—moreover, his job is to distribute.

Even a small modernizing venture involves frequently fifteen to twenty-five separate building trades and specialists—seldom fewer than three or four—and hundreds of sorts of materials. On any ordinary building job the variety is very great, and few if any dealers carry anything like a line so complete as to supply any regular operation.

These four factors need to be coordinated far beyond anything now prevailing—and definitely organized—to meet a great new phase now confronting the building industry. They must in some way combine to serve the public as a single operating unit in order to fully take advantage of the huge waiting modernization market. Say that it is their chronic new-building mindedness which is holding back this achievement. Very well—economic pressure, the continuance of the marked sag in construction contracts, will bring about new alignments in due course. But much should be done to accelerate this process, in view of the losses caused by the current depression and the folly of complaining of conditions whilst in the background an incomprehensibly great and new market is waiting for action.

Financing agencies are ready. It is not a problem of finance this time, nor of market. Whatever has not been done has resulted from a total lack of organization within the building industry for handling, or producing, this kind of work. Where is the vaunted organizing ability of business America today, while this enormous opportunity waits?

As the industry is now organized, a modernizing job which involves an expenditure of less than $5,000 finds no takers who are equipped perfectly to meet the owner's wants. There is no competent one-contract functioning body—with the rare exception of one or two local specialists who have been operating quietly in certain centers—to whom the layman may turn. Incompetent ones? Yes, but even these are few. This field requires more than child's play or cream-skimming. It calls for a high type of professional, business, and organizing ability: and an abandonment of the proneness to look for, wish for, hope for, another great era in the near future of *new* building.

Why stress the small modernizing job, of the sort mentioned above? Because inevitably that sort of an expenditure, that sort of "spoonful" job will inevitably comprise the bulk, by far, of the work to be done in this country. It is not only the basis but it is the real force underlying this whole conception of a new market which must be opened, to replace the era of new buildings on any such scale as we have heretofore enjoyed, and which, except possibly on Manhattan, has gone from America forever. There are important economic and sociological reasons which have brought about a form of increasing stabilization in this country, which are too ramifying to discuss here, which make certain a downward curve in everything the building construction group has heretofore depended implicitly on, and which leaves nothing else but a compensating upward curve in the replenishment and modernizing field. Properly taken advantage of, this new source of activity will rival the one whose passing we now slowly but steadily witness.

The small job has hitherto been held in a sort of contempt. We are entering a new period when catering and patience will become new and interesting factors in American business. It will tend of course to develop executives of a type which can contend with the new conceptions. That is why the modernizing field requires a different type of organization, and must have it. It will come out of the present welter of itself, if given time. I would not be surprised to see a great chain organization assume the responsibilities—and the profits—accruing to organized effort in this new domain. Does the industry—which is to say all of the factors whom I have named, such as manufacturers, architects, dealers, and contractors—believe that their best interests for the future will be conserved by properly organized cooperation among themselves all over the country, or by neglecting the subject and leaving its development to future chain organizations? Finance is the only major item which is safeguarded in either event—but who knows when

some day it may be that powerful "chains" will dictate terms to Finance?

Why is it requisite that an organization be set up? Why is it that individuals are unable to execute, properly, a mere modernizing venture?

Well, the contractor, we will say, is willing at any moment to take on any modernizing job, small or large. But he is incapable of initiating the preliminary plans or helping the owner to formulate his or her (more often her) ideas. But, assuming the contractor goes this far—through this absolutely necessary preliminary detail—he is next confronted by the owner's desire to obtain competitive bids, inevitably. The plans are only vague and hazy, therefore the competitors seldom bid on the same understanding of what the work is to consist of in its infinite details, hence the bids submitted are hardly comparable one with the other. And the contractor, who made the initial estimate and probably spent a lot of time promoting the job, is just as likely as not to lose out in the bidding and lose the job. He finds it unprofitable therefore to work up such propositions and prefers to bid on authentic plans and specifications made by a reputable architect.

But an architect is seldom or never called in on these small jobs. He is the first man to receive a call when a large piece of work is contemplated. On large alteration contracts he controls and manages the whole operation, making plans, specifications, taking bids, and letting the contract to a competent contractor, and then supervising the construction work until it is finally completed. The architect is seldom omitted on work which involves large expenditures. But it is a matter of fact that he is totally ignored when it comes to small or moderate priced work.

Then, we will say, the dealer may have a happy idea that *he* can promote and develop some modernizing work. His salesmen work up prospects, several of whom decide to go ahead and have some work done. The dealer suggests that the owner engage an architect—to do the things the dealer himself is not (yet) technically qualified for. The architect does this and puts the plans out for bids. He duly lets the contract to some qualified contractor—and in the ensuing scramble on the part of every dealer in town for the bills of materials which the contractor shall purchase, the dealer who originally worked up the order finds that in the competition his price is too high, and the order goes to a rival or a price-cutting outfit.

That dealer then discovers that there are flaws in his method, and that despite his enterprise, initiative, and salesmanship in developing the prospect, he is left out in the cold. Therefore, as may be readily seen, none of these important contributing elements, architect, contractor, or dealer, is in position to work alone in this rising new field of modernization work. That the fourth element, the manufacturer, is in any better situation needs no denial. Only Finance stands to win, heads or tails. Although the firm, steady tread of Power, which signifies the growth of the chain idea, may yet divide the honors with Finance!

An age of intensive conservation—a new conservation in a form which we have never, in America, witnessed—lies ahead of us. The ensuing decade will mark with readily identifiable signs the coming of a new phase in American business—a new approach to every market will be a necessary ingredient of success. The conservation of property and all tangible values will become an intensively cultivated field. Properties are now lying in a neglect that will be discountenanced a few years from now. Property which can be enumerated in millions of parcels in this country is susceptible to salvage in some degree or another. Valuable land is being occupied by buildings too good to be scrapped and yet unfit for modern competitive needs. Too long has the "high standard of living" in this country implied mere ownership of a motor car or being well-dressed and taking plenty of amusements, and too little has it implied a standard of home-design and fitments which were comparable in quality with the automobile or the free-spending aptitude. By and large, the housing standards of this nation are too low, and it is regrettable that this fact has never received the attention it has deserved.

An intense cultivation of this field will develop possibilities for renovation work, improvements and alterations which will not only raise the standards of American home life far beyond anything yet attained, but will tax the resources of the building construction industry to its limits, in production and man-power. Put every home in the nation in good repair—that single feasibility has a mighty potential when measured in terms of sales and employment. Carry the idea beyond that—into buildings of every classification. And then carry it beyond that, that every home shall have the common modern facilities, at least, as its minimum requirement. Go on, to further horizons, and add more comforts and beauty, and cleanliness insurance, so to speak, by building for permanence and substantially. Rectify not only homes but their surroundings and approaches—a whole world of opportunity for reconstruction resides in this aspect alone.

Modernization will spread by force of example. The *new-building mindedness* of public, real estate men, and owners has made visualization of its true nature impossible. The salvaging of real estate values has not been hitherto fully indicated. People learn by the eye. Only as executed examples proving this economic foundation to the whole modernization movement become visible, does the added value and beauty become more apparent. When modernization has been extended to whole blocks and stretches of streets, and to entire neighborhoods, so the eye may see conclusively, the demonstration will be complete.

A neutral agency such as the Chamber of Commerce of the United States has been suggested as the medium through which to effect community organization throughout the nation, with local clearing houses to serve the public. Modernization in its final aspect is a community matter. Its national significance is that it offers a solution of one of the critical economic problems of the day—that which is associated with the building construction industry which has been struck a mortal blow.

There is no end to the intensifying influence which this country is in process of undergoing. Modernizing is one of its large and most obvious phases, but intensity of effort will ramify in many directions. Every tangible value in the country will be attended with a new and microscopic re-valuation and conservation. This will be the keynote of our new economics, which will be very European at root, very English in a sense, and very soundly based—henceforth.

There is something that *needs* to be done in fifteen million homes or more. There are literally innumerable ways of improving our dwellings, or of revising stores say, for better and intenser merchandising. Other buildings need more beauty—this is a fertile opportunity in itself—or more light. Nearly all of them should have more convenience, or points of weak or bad construction remedied effectively. Other buildings occupy valuable land on which no adequate return is possible in the present condition of the structures. The investment can be salvaged and oftimes increased in value by intelligent alterations. The location of a piece of property is the essence of its value. Good locations deserve thoughts of how they may be conserved or improved by a judicious expenditure for modernization.

The revamping of office building lobbies—and corridors—that are growing out of date, and the installation of modern elevators, and the improvement of heating systems and other equipment, in such investment properties, is a fruitful field. The re-designing of foyers in apartment houses which may be slipping back, and the introduction of bright new ideas of various sorts that bring a building up to date at a moderate expense, is an extensive opportunity. Comfort, convenience, good construction, and added beauty, are not matters of *cost*, but of good design and judicious expenditure.

Good taste and good judgment most often spell economy of cost.

Thousands—tens of thousands—of old buildings need new fronts. Whole blocks need to be made uniform and beautiful façades created where now exist ugliness and disorder. Is not this a subject for community leadership and action? It lies within the power of every town, small city, or large city, to revamp its business streets so that in miniature they will be Town's Pride, Fifth Avenues in their own right—through intelligent modernization.

Whole sections of cities may be reclaimed, and realty values brought up to unheard of high levels. The modernizing process need not stop at privately owned property—public buildings properly modernized will often provide an increased space and efficiency at a cost much less than that which at first thought could only be attained by a heavy bond issue and a totally new structure. Schools and institutions of all kinds are numbered by the tens of thousands—they cannot be deemed proof against time and obsolescence or proof against possibilities of being intelligently modernized and improved at a cost much below accustomed expenditures for new buildings which but add to public indebtedness.

A due consideration of the possibilities of modernization by communities and taxing officials should result in enormous savings to taxpayers. Such taxation economies, besides, will be demanded in the years ahead of us. The new conservative forces will not pause after reinvigorating privately owned values. A new face will be put on the whole tax situation. Intense economy will be one of the orders of the day—the conservation of existing utilities rather than the building of new ones—that is to say on the extensive scale to which we have been accustomed in the past.

The modernization of industrial plants, and of equipment, to render higher service at lower costs to meet the more intensified competition which is predicted for the next decade or two, will result in a huge volume of replacement work. Often in the past plant expansion has represented sheer waste, has often been a fatal move, due to haste and thoughtlessness. Very often a study of the conditions would have shown that the desired enlargement of production facilities could have been obtained at less cost and with greater efficiency by plant modernization and development of a more intensive use of the equipment or an improved layout.

People are averse to heavy financial commitments at present, but are willing to make small commitments ahead. It is in just this fact that much of the possibilities, and the strength, of the modernizing idea resides. People *can* and are willing to finance small borrowings such as would be required for remodeling, rebuilding, or modernizing homes. Accumulated savings are providing a new and enormous cash reserve to base a new credit line on—a credit line that will not be stretched, this time, beyond capacity, to the breaking point. Sounder economics will from now on prevail.

With extensive modernization activities on every hand, as the movement develops, reclaiming not only individual homes and business structures, but whole street fronts, of business and residential *districts*, the problem will develop another and most promising aspect. It is this: that in the midst of an improvement of properties which will not only be general in every locality but nationwide, those that *do not* undergo some form of modernizing to keep them at the *new par* will tend to depreciate *further* in value.

Out of the welter of change that is going on by reason of the "depression," we may expect to see the results of this movement crystallize, moreover, in a more substantial type of construction for all kinds of structures, higher than the average in the past has been in America where permanency was a by-word. The European idea of build well will develop finer workers among us, better craftsmanship. It will also teach us greater conservation in the utilization of every kind of material. This will reduce labor and assembling costs, resulting finally in a generally lower level of building costs without any sacrifice of quality standards, or standards of comfort, completeness, or beauty.

In one view of it, the modernizing movement will parallel in its growth the automobile industry's progressive stages. First, the idea, received skeptically. Then the gradually increasing number of actual ex-

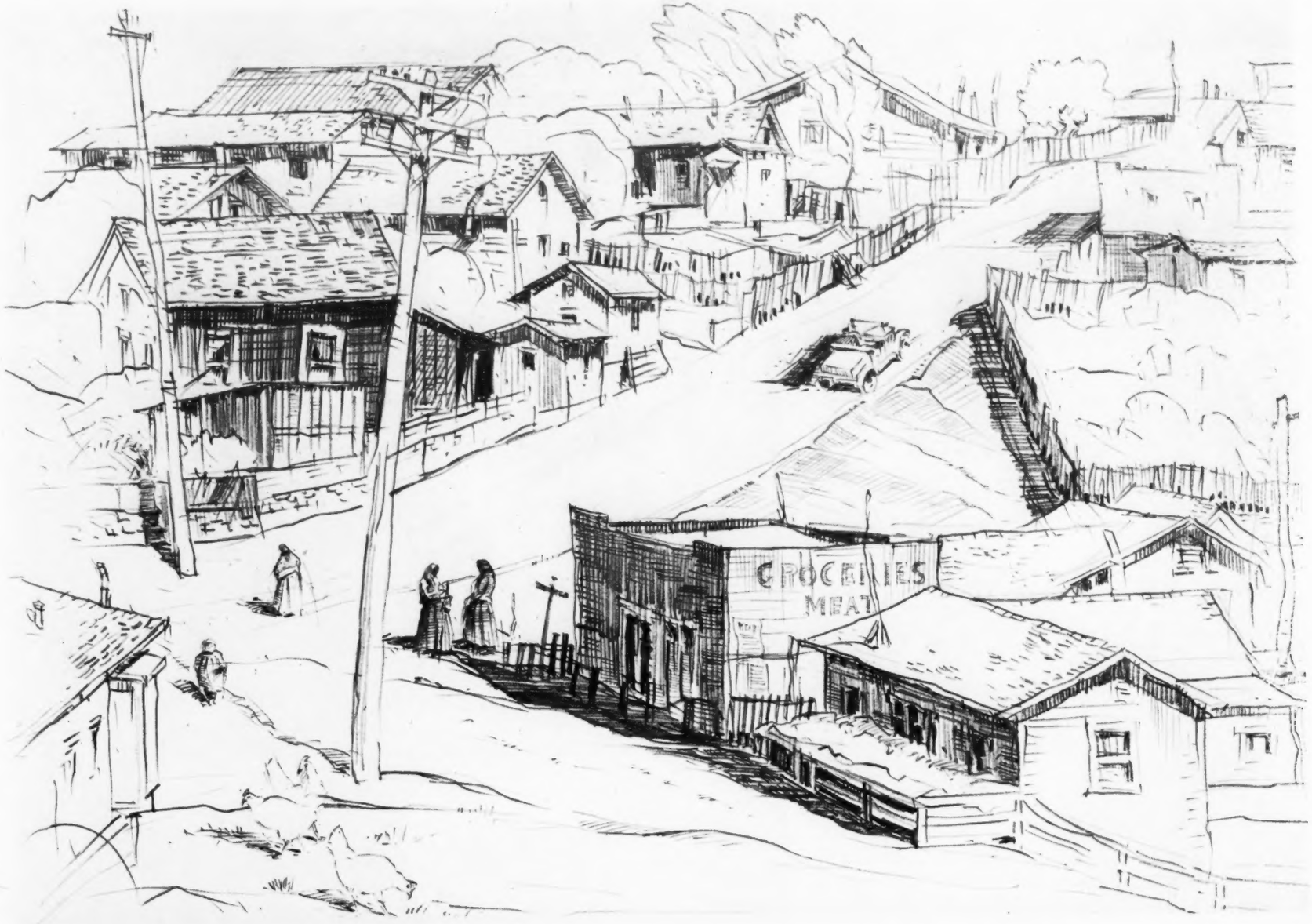
amples of the finished product, which will be followed at once by the perfecting of the financing facilities. Where there is a demand for any product you will always find—no matter what the so-called condition of the money market is—capital available in whatever sums are required. Then—continuing our automotive parallel—the organization of the modernizing field, the productive facilities, will become highly developed, with a constant improvement in the product, in quality, design, and results obtained. A new technique for this sort of work will evolve.

And, as in the motor industry's history, when all of these have been thoroughly coordinated, *the modernization industry* as such will be born. It will become one of the great national entities. Its work will not stop—stimulated by promotion efforts, advertising, and highly organized resources—until the entire roof line of the nation has been remodeled, done over, improved, brought up to the *new par*. Volume will be steady and continuous: for there is much to be done by way of this sort of enterprise, millions of buildings, and twenty years of employment of men and manufactured products: drawing on resources of forest, mine, and field.

The modernizing industry will take on, with its new extent, now undreamed of, an industrial authority of its own. It will become . . . . to continue the likeness to the development of motors . . . . a transforming national influence.

America is turning its back on new building construction. And our old buildings one by one, by millions, are following the same course that the stock market did, only without any reason—are dropping steadily *below par*. It is the building industry's newest problem. Urgent economic reasons, conservation of property values, relief from a growing dilapidation that already blemishes our cities and small towns as well, provide a sound basis for this development—unexpected child of the rapidly changing times. If it eventuates in raising the standards of a nation to the extent it is capable, and of introducing new values, new beauty, new zest, and enthusiasm in the industrial world, wouldn't this almost make the depression worth while after all?

FROM A BLACK PASTEL SKETCH BY CARL WESTDAHL HEILBORN
GRAUMAN'S CHINESE THEATRE, HOLLYWOOD, CALIFORNIA
Made directly from nature—Size of original, 21½" x 17"



FROM A PENCIL SKETCH BY CARL WESTDAHL HEILBORN—"MEXICAN VILLAGE, LOS ANGELES"

A quick study, made directly on the spot, to determine the suitability of the subject for an etching—Size of original, 12" x 9"

The Architect's Problems in Monolithic Concrete Construction

By Otis F. Johnson

People who will try new things, or old things in a new way, are of two classes. One knows so little about the possible difficulties involved that he does not hesitate to take a chance; the other is so accustomed to meeting difficulties that he knows there will be a way of meeting the situation. Both of these classes were represented in the group of men who associated themselves to carry through the project of the Norton Hall in monolithic concrete construction. Just who belonged to which class I do not choose to say, but I like to believe that at the end of the job, most of the former class had made some progress toward the latter class of those who know. Furthermore, I am glad to say that the latter class was right in that there were no difficulties involved which reasonable care, forethought, and experiment did not solve satisfactorily.

Suppose then that you have a job which you wish to do in concrete, how should you go about convincing your client that concrete is a suitable material to use? In the first place, be honest with your client. Don't make the mistake of persuading him that he will have anything else but a concrete building when it is finished. Don't lead him to believe that through your cleverness he can have the permanence, strength, and economy of concrete, and at the same time get the appearance of stone or some other popularly considered aristocrat among materials. Let your client know that when his proposed building is finished it is going to look like concrete—not as he has been accustomed to see it in foundations, cement block garages, or dirt-stained retaining walls—but concrete as it appears, honest and unashamed, in hundreds of high-class beautiful buildings. Examples of these buildings are not so plentiful in the east and middle west, and the few we have are too widely scattered to make visits to them practical. Your next best method then in presenting the possibilities of concrete is through photographs of these buildings in which it has been used. Such photographs are available through certain societies and associations whose purpose, among other things, is the promotion of the use of concrete.

THE NORTON MEMORIAL, CHAUTAUQUA, NEW YORK—OTIS F. JOHNSON, ARCHITECT

THIS BUILDING IS COMPLETELY MONOLITHIC, EVEN THE SCULPTURE HAVING BEEN CAST IN PLACE

A quick study, made directly on the spot, to determine the suitability of the subject for an etching—Size of original, 12" x 9"

PLASTER CASTS OF THE SCULPTURE FROM WHICH REVERSE MOLDS WERE MADE

THE REVERSE MOLDS WERE ASSEMBLED IN THE FORMS ON THE BUILDING AND THE CONCRETE CAST INTEGRAL WITH THE STRUCTURE

At this stage, in my own experience, my client (a man of excellent taste and great practicability) said, "I'll admit that it all looks good in photographs, the form marks and rough texture make an interesting wall, but I am not so sure that the actual effect would not be somewhat shocking, especially to the rather conservative community in which it will be located." So we decided on the best job possible with wood forms, and specified 6″ D&M white pine form boards to avoid warping and heavy grain markings. The joints at reentrant angles were mitred so that the end grain would not show in contrast to the flat grain, and the boards carried level around all projections throughout the building. The result was all that we had hoped for. But after the building was completed, my client chanced to be in California and took the trouble to look up some of the buildings he had previously been shown in photograph. On returning he said, "We demanded and got a much better form job than was necessary; those photographs didn't lie."

In order to get a fair and just bid, much depends on your specification. It should be phrased so as not to admit of double meaning and ambiguity, but should never sound as if it had been written by a lawyer. Know what you want; then state it simply and in as few words as will make it clear. Determine what kind and grade of form lumber will give you the effect you desire and then specify it by name and grade and how it shall be placed. The specifications should state whether local aggregates can be used or if other aggregates must be shipped in. If this cannot be determined before plans are sent out for bids, an arbitrary price should be stated so that all bids will be on the same basis. Typical details of reinforcing steel and proportion of mix of concrete should be given so that the quantities taken off may be accurate and not a guess. State what the contractor must have in the way of mixers and equipment. This latter may seem a little drastic, but a practical illustration will show the wisdom and necessity of it. The pour lines (lines between successive pours) are going to show in the finished work and they cannot be allowed to occur hit-or-miss just wherever the mixer ceases to function or where quitting time overtakes the crew. The pour lines must be controlled by the architect. A study of your particular job will usually show where these lines may appear without disfiguring the surfaces. Logical points are at grade, top of base, sills, and heads of windows, spring line of arches, top of string course, and so on. If there is a tower or other feature where such logical breaks do not occur, make the lines enter into the design by establishing them at regular heights where they will show as level lines around the tower. In our job some of these pours were as much as fourteen feet in height. So mixers and other equipment were specified to handle the amount of concrete necessary for the pour in the normal run.

It might be well to say something as to what working drawings, details, engineering drawings, models, and moulds are necessary for the contractors on a con-

crete job of this kind. Better working drawings (from the builder's standpoint) would result if architects and draftsmen were less vain as to the appearance, and if they kept in mind that the drawings were to build from instead of to exhibit. Our working drawings on this job were at $\frac{1}{8}''$ scale, walls shown only in outline, with notes to indicate the materials. The thickness of all walls was shown and all governing dimensions indicated. All openings and ornament and special features were numbered or lettered on the plans and elevations. Later detail drawings and engineering drawings supplemented the $\frac{1}{8}''$ scale drawings. A number of typical wall sections at $\frac{1}{2}''$ scale were given in the bidding set.

In detailing mouldings, door architraves, string moulds, etc., the profiles and sections were studied from the standpoint of ease in filling when poured with the walls. Breaks and offsets in the walls and pilasters were made to correspond to standard lumber sizes—$\frac{3}{4}''$, $1\frac{5}{8}''$, etc., for ease and economy in constructing forms. Floors, window sills, spring lines of arches, and such were shown by elevations from datum. A somewhat similar scheme was adapted on the detail drawings for showing the depth of offsets in walls and pilasters. The building line was established as datum and the surface of all breaks and offsets was marked with reference to this line. Such a system has advantages, in that a typical bay can be drawn up in elevation at $\frac{1}{2}''$ scale and every surface shown in its relation to other surfaces without the numerous plans and vertical wall sections. It is likewise much easier for the form builder to work from.

Engineering drawings were put out in a separate set; these were, for the most part, at $\frac{1}{4}''$ scale to show the reinforcing bars better. Pour lines were shown on this set. The length of the vertical rods corresponded with the height of the pour plus the required lap of steel. All of the engineering drawings referred back to the architectural set as key drawings. The drawings were further keyed (by means of numbers and symbols) to a reinforcing-bar list.

Using the system of detail drawings mentioned above, only a few full size details were necessary. They were limited mostly to profiles of moulds, sections of door and window architraves, interior plaster details, and wood trim.

A model of the front of the building at $\frac{1}{2}''$ scale proved invaluable. It gave the client a truer conception of his building than could have been possible from drawings and perspectives. It enabled the sculptor to study his problem with a full knowledge of structural lines of the building. It was in constant use in the drafting room as an aid to design and the visualization of the third dimension. The model was made before many of the details were fully determined, and experiments and trials were made with it and on it, enabling one to prove to himself and client the proper solution of details and ornament, the terraces, and other problems of the approach and grounds.

Plaster moulds are better kept out of the general contract. In all sculptural and architectural ornament a full size model is necessary from which to make the mould. Naturally, the sculptor will furnish moulds for his part of the work. Moulds for the architectural ornament can be made by any good decorative plaster shop. The architect can turn drawings and sketches over to the plaster shop and one of their modelers can work up the designs in model. For myself, I prefer to study and design my ornament in models, so these were turned over to the modeler at the plaster shop to be enlarged to full size. When the models are approved, plaster moulds are made over them. It is necessary to instruct and sometimes supervise the caster who is to make the moulds. If the ornament

PANELS ON PYLONS WHICH WERE ALSO CAST IN PLACE AS THE WALLS WERE POURED

NORTON MEMORIAL, CHAUTAUQUA, NEW YORK—OTIS F. JOHNSON, ARCHITECT

is to be poured in place with the wall, the mould will have to be reinforced with hemp fibre and vertical standards and horizontal waling-pieces, which also enable the contractor to incorporate it into the wall forms. The mould then will be made up of the inner coating of plaster of about ½" thickness; a layer of hemp fibre dipped in plaster, of about 1½" thickness; and the wood grillage composed of the standards and waling-pieces. We found that two by four's set edgewise for the standards and the same for waling-pieces set flatwise were entirely satisfactory. The standards were spaced about 18" on center. The waling-pieces were spiked to the standards and the resulting grillage set on the plaster mould before it had been removed from the model. The grillage was then leveled up to a true plane parallel to the plane of the face of the mould. The standards were then secured to the plaster mould by means of the hemp fibre dipped in plaster and the strands looped over nails driven into the standards.

Our largest moulds were 9'-6" square, too large for easy transportation and erection at the job. Small overlapping pieces of tin were set in the clay model, forming a wall of tin which divided the mould into three sections, approximately 3'-9". After the grillage was fibred in place, the waling-pieces were sawed in two over the joints in the mould. Wood splices were made to bolt over the joints in the waling-pieces so that when erected the mould would be properly aligned and held in its proper place.

A mould so made and reinforced is very strong and will stand all of the ordinary abuse of transportation and erection. However, to be safe, should some irreparable damage have been suffered in transportation, or some mishap occurred in the casting, the sculptor was required to save the moulds of all work until the forms and moulds were removed from the walls.

The contractor was required to make trial casts of certain full sized moulds under the same conditions as were proposed for the final pouring in the walls. This made him familiar with the process and brought out unforeseen problems. For instance, the concrete falling the long distance through the reinforcing rods tended to segregate and form stone pockets. The falling concrete also struck the plaster mould and was a source of possible damage to the more fragile projecting parts. Concrete would splash up on the mould and adhere, so that partially set concrete would be mixed with the fresh material and an ununiform surface result. Again, the settlement of the concrete, previous to its initial set, would draw away from the under side of projecting parts of the mould and cause imperfect casts. These things were overcome by using metal chutes to conduct the concrete through the reinforcing rods and to within a foot of the top of the pour. The rate of pouring was kept down to within 18" per hour, thus allowing the settlement to be taken up gradually in each 18" section rather than the whole amount, in the full height of the pour.

Whether to cast the ornament in place or to precast on the ground and later place in the walls, is often a question which can best be decided by considering the following points and characteristics of each method. Precast work, being usually cast face down in a horizontal position, will have a more pitted surface and a darker color than the work cast in place. Reinforcing rods cannot be run through tying it in place as in cast-in-place method; dowels and mortar must be relied upon. The mould may be complicated and hard to reinforce in place, such as a window grille, in which case the precast method has advantages. It may appear that the risk of getting a perfect cast is greater in the case of the cast-in-place method. Our experiences showed that casting in place was not a difficult or especially hazardous method. In my estimation, the cast-in-place method produces better concrete, is more consistent with the idea of monolithic concrete, and looks more like an integral part of the building.

All that I have said as to drawings, specifications, details, and so forth, might be strictly adhered to and yet your building turn out to be an unholy mess. Good engineering service and competent supervision are necessary on a building of monolithic concrete to a degree not approached by any other type of construction or kind of materials. When I say good engineering service, I am not referring alone to a man who can design safe, economical, reinforced concrete. He must intimately know his materials and have foresight or experience which will tell him what results will follow certain combinations of circumstances. Every bar requires special detailing to make a cage of reinforcing that is safe from job displacement. This is not work that can be turned over to a bar company for detailing. Every batch of concrete is equally important, since one bad batch which gets past your superintendent will produce a spot which will ruin a whole façade.

And a final word as to costs, for what item looms larger in the mind of owners (hence architects), than costs. Monolithic concrete will save from twenty-five to thirty per cent compared to other materials. The owner must not be allowed to stretch this to thirty-five or forty per cent as might be possible if the detailing is left to bar companies or incompetent engineers, and supervision allowed to go hang. For his own protection, extra expense in these matters is economy. And how about the cost to the architect to put out designs for a building in concrete? If your fee includes the structural engineer's fees, as is usual, you can see that they will be above usual costs. Your design will cost more due to the practical considerations of the materials, and a closer touch with all phases of the work will mean more of your time than ordinary work. I would say that a good full fee is the minimum.

Some Fallacies of Obsolescence

A Contribution to the Controversy

By Eugene B. Church

Editor's Note:—*This article is the second of a group on economic subjects by Mr. Church. The first, under the title "Economic Heights of Buildings," was presented in the March, 1932, issue.*

The increasing importance of and interest in the subject of the obsolescence of buildings (which usually includes inadequacy) as evidenced by the increasing discrimination of investors, bond houses and others, and the amount of space accorded to it in the current literature of investment, seem to justify any further study intended to set forth the facts and any legitimate inferences from those facts. Particularly is this true since much of the controversy is of a purely partisan nature and designed to support the claims of interested groups, often at the expense of both facts and logic.

There is one line of thought which challenges thoughtful attention and which seems to pervade nearly all discussion of the subject. This consists of the explicit or implicit assumption that if *some* office buildings and similar structures of thirty or forty years ago now have or seem to have become obsolete, that it therefore necessarily follows that the economic life-expectancy of *all* of our modern, well-constructed buildings of this kind should be set at thirty or forty years. Now there is no valid evidence offered in support of this assumption (though there are reams of sophistry), for the very simple reason that there is none to offer. The period could just as easily and as logically be set 50% more or 50% less; for the difference is merely one of degree and not of kind, and in neither case can it be proven or disproven until the lapse of the time specified. Even then, it could only be proven or disproven of an individual building and not of all such buildings. Only in rare instances can this obsolescence be evaluated and never until after it has occurred.

Now this problem of obsolescence is highly complex, being an integral part of our very complex economic life; it involves almost untold wealth in land and buildings, it affects the interests of millions of people directly and probably all of us indirectly and is not to be disposed of so easily as some sanguinely imagine. Those who own property or bonds and those who pay rent are only two classes directly affected yet they alone pass the burden on to a multitude—though this is not the place to discuss the ramifications of effects. Beclouding the issue may serve the few, but that is neither science nor economics.

It is readily admitted that these modern, well-constructed buildings should have a physical life of seventy-five to a hundred years, even though that has not been established; nor has it been proven that they will not last several hundred years, as many European structures do. But, in setting the economic life of these buildings at thirty or forty years, very different structures, locations and conditions are treated as if they were all identical, no modifying conditions or exceptions being recognized. The fundamental assumptions are not legitimate nor are the inferences drawn from them necessarily true.

The obsolescence of a building is frequently caused by the obsolescence of its district and the site on which it stands, a condition to be seen in nearly every rapidly growing city. It is quite as obligatory upon the site to maintain its own value (and consequently that of the entire investment) as it is for the building to maintain its own value. Many buildings are classed as obsolete that are really not so but owe their loss to the fact that their sites have become less desirable. But the current theory does not recognize this fact and unjustly charges the building with all responsibility for the loss. Neither does this fact contribute any data or assurance as to the future economic life of any building.

Not only so, but building obsolescence is also often due to the very great appreciation of the value of the site. Evidently, if a site becomes so valuable that the building is no longer able to produce an adequate return upon its own cost (or value) and the increased value of the site, it must be replaced by one that can. In this case, also, the theory charges the building with the obsolescence even though the building has nothing to do with it and cannot be properly charged with a loss due to conditions wholly outside of itself. Nor does this fact contribute anything to a foreknowledge of the future economic life of buildings in general or of any building in particular.

The unprecedented development in the design, arrangement, construction, equipment and finish of buildings in the last thirty or forty years may certainly be considered a primary cause of obsolescence; though this development probably cannot continue forever. Its history is little short of the marvelous and some abatement of its causes and effects should not be wholly unexpected. Before the recent (1929) stock market collapse, we were told by numerous authorities that a new economic era had been established and that the existing conditions would go on forever without danger of change or loss; but that was a mistake, as we now know only too well. In the case of buildings, we are told with equal complacence that the rate of change and loss through obsolescence as indicated by a *few*

buildings during the last thirty or forty years is not only universal as affecting all buildings but is finally fixed and will never change. In both instances, we are informed that the economic curve has no cycles, which is absurd.

Obsolescence means that a building or its site or both has become less desirable (for one or several reasons) than others and therefore less profitable; it is not a measure of physical but of economic decay (either positive or negative). Now only a wealthy community can afford to scrap buildings worth hundreds of thousands of dollars (as is often done) and build, occupy, and pay for one many times larger. For it is not the Owner nor the architect nor the house of issue which demands such a loss, but the public which rents the space and pays a profit on the investment. Obsolescence is therefore (at least from this point of view, among many others) a measure of luxury or of economic extravagance. Now our economic liberties as the wealthiest nation in the world may have an end or our recent era of unprecedented prosperity be so modified that we shall be compelled to make more protensive as well as more intensive use of our wealth. The moving of high-value districts and the desertion or destruction of old buildings in favor of new ones is a luxury we may not always be able to afford. Of this possibility, any of our recurring periods of economic depression abound with evidence.

That there are many buildings thirty or forty years old that are still in good physical and financial condition while many others are not, is a truism it should be needless to recite; the current theory is predicated upon the latter and extreme condition but is discredited by the former. The theory fixes, or presumes to fix, the economic life-expectancies of all buildings (of the class) in spite of the fact that anyone, after the briefest survey, can find or call to mind many exceptions that render the theory itself obsolete and establish the fallacy of such generalizations. The tables of such expectancies are not so much a well founded prophecy as they are a poor and incomplete record of the past. True, *some* of them *profess* to be based upon averages. But the current idea among so many ignorant people that the "average" is the supreme and final criterion of all things is as vicious as it is fallacious and unfounded.

Again, with reference to those structures of thirty or forty years ago and now obsolete in and of themselves (and not contributed to or caused by the changed conditions of the site), the very methods of design, arrangement, equipment, construction and finish which caused their obsolescence are themselves now obsolete. Excessive ornamentation, poor arrangement, non-skeleton construction, as well as inadequate toilet facilities, plumbing, heating, ventilation, electrical equipment, etc., are not a part of modern buildings. It cannot be foreknown which, if any, of the modern improvements will eventually become obsolete, nor whether they will or not, nor when such occurrence will take place, if ever; for it is impossible to "look into the seeds of time and tell which grains will grow and which will not." And yet is confidently prophesied that *all* of these new buildings will cease to have any commercial value at some arbitrarily assumed and definite future date!

If we have made a multitude of improvements, eliminated every known source of obsolescence, are we nevertheless under the logical necessity of assigning to all of our modern buildings the same economic life as *some* of those of a previous generation? It is nothing short of folly to compare *some* of those old buildings with *all* modern, well-built structures and set for the life-expectancy of the latter a time period which actually misrepresents the former. The two have exceedingly little, if anything, in common.

It is also too frequently forgotten (if not deliberately overlooked) that management is a highly important factor in the success of property investment. The writer personally knows one major structure in which a change of management increased the gross earnings by 25%. Buildings and Building Management records one in which the gross earnings were increased 75%. If the favorable condition had occurred first and been followed by the other, it would have been said that both buildings had become obsolete—which would have been wholly untrue even though it did bolster up the popular delusion about universal obsolescence. One of the most prolific sources of (so-called) obsolescence is that the newer and larger buildings are usually willing to pay well for really competent management while the (obsolete) owners of older and smaller buildings are not willing to meet this form of competition, though vehemently charging the building with their own indolence. It is never proper to charge a building with obsolescence until proof is secured that the management is all that it should be. The science and practice of building management has made strides equally as great as any other phase of the problem and cannot be logically nor properly eliminated from consideration of the subject of obsolescence. While other major investments are accorded the most expert and careful attention, it is only too often true that an investment of a million dollars or more in site and building is consigned to the fate of incompetent management and unsuccessful operation.

The current theory also entirely overlooks the fact that the whole science of Building Economics is dedicated to the elimination or improvement of these very things which have, in the past, rendered buildings obsolete. Few people, indeed, realize what efforts are being made and what results are being achieved by such groups as architects, engineers, the National Association of Building Owners and Managers and others toward the elimination of every source of loss.

Now the shorter the life of a structure, the less desirable is the investment because of the rapidly increasing cost of amortization; and, if the economic life be arbitrarily fixed at a shorter period than the facts justify, then building investments will become less desirable (obsolete) relative to other forms of investment. The proponents of this theory that obsolescence is certain and certain to occur at a definite future time are constantly (if perhaps unwittingly and indirectly) trying to impress upon the mind of the investing public that investment in buildings is highly wasteful and

hazardous. They tacitly and overtly assert that the building or the site or both cannot hope to have any economic value after a period which they presume to predetermine and fix for every structure of the class, regardless of location, design, management, and all other circumstances and conditions, present or future. And once the public becomes thoroughly imbued with this idea, real estate bonds may be expected to share the obsolescence while money seeks other and safer (?) forms of investment. Viewed in this light, the theory looks like an attempt to turn the tide of investment away from real estate securities, though, of course, it is not; but its necessary and ultimate implications have not been considered.

The theory asserts that the economic life of a building is only thirty or forty years, while it is freely admitted that the physical life is seventy-five to one hundred years; hence that its useful life is therefore only about 40% of its physical life (30 and 40 being 40% of 75 and 100 respectively). This means that 60% of the value of the building is to be scrapped—wasted. It means that 40% of the cost must pay the assumed rate of return upon the total cost. Certainly, this is demanding much of the 40% and it would be interesting to know what other forms of investment produce such generous returns. If this is to be accepted as final, why not build cheap structures designed for a physical life of thirty or forty years, and invest the balance where it will earn a higher return?

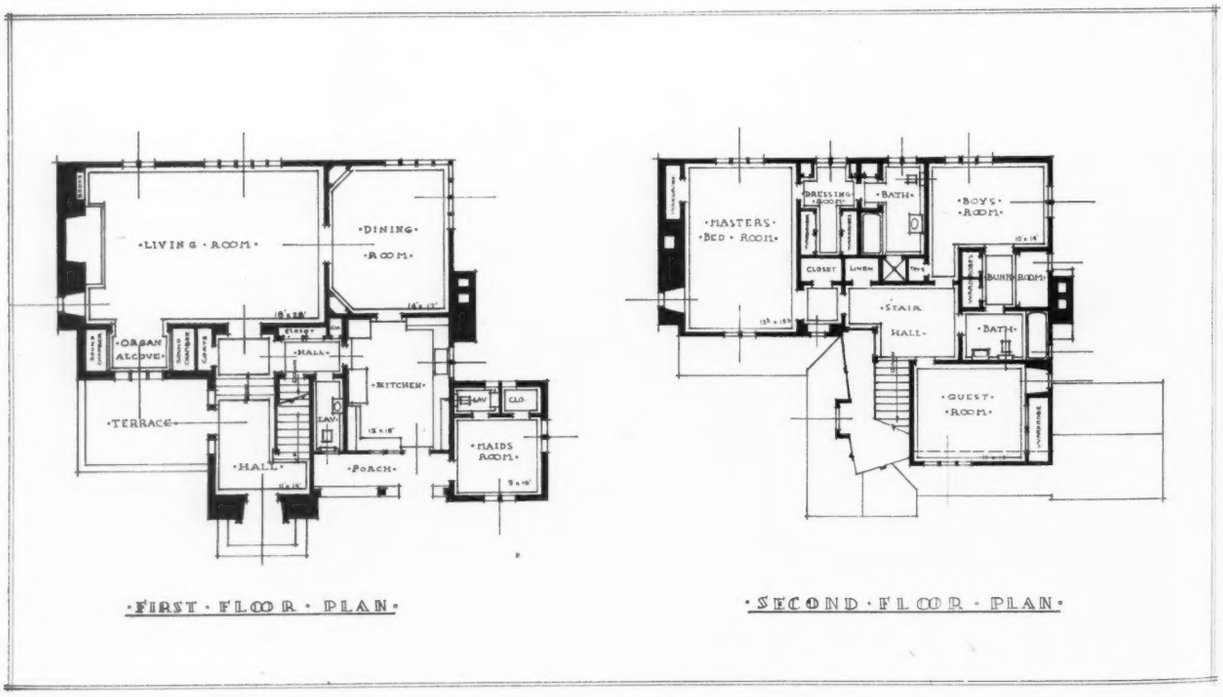
The question of the predetermination of obsolescence is, in every essential respect, similar to other occult subjects for which the human mind seems to have a native penchant. History and sociology, politics and mysticism are replete with illustrations of the unknown or the unknowable or both being established by the perfectly simple process of assertion endlessly reiterated. And this process has always been destructive of human interest and never conducive to it.

In the broadest and most general view, obsolescence, if and when it occurs, is a social phenomenon; it is a function of change, of progression and retrogression, of the ceaseless ebb and flow of things. It is not amenable to physical nor to mathematical laws and yields nothing to scientific inquiry. It is preeminently a question of opinion and controversy and must be considered as such by fair-minded people until the actual occurrence of the obsolescence can be demonstrated. All of which is no indictment of an owner who can charge 3 1/3% per year for depreciation (?) and obsolescence and pass it on to his tenants in the form of increased rentals while deducting it as a capital loss on his income tax report; that is a business proposition and not a matter of opinion or controversy.

MICHIGAN AVENUE, DEARBORN, MICHIGAN—PENCIL SKETCH BY RAGNAR L. ARNESON

This inconspicuous little building on Michigan Avenue in Dearborn, built about 1850, is connected with the outstanding pioneer families of that city—was post office of Dearbornville in the days when only two planks served as sidewalks on Michigan Avenue. The artist is well known in Detroit where he conducts an outdoor spring and summer sketch class.

FROM A RENDERING IN PENCIL ON TRACING PAPER BY HARRISON JOHN OVERTURF



HOUSE FOR ROBERT DYER, SEATTLE, WASHINGTON

GEORGE WELLINGTON STODDARD, ARCHITECT

Traveling Double, Part 2

By Sylvia Starr Wertz

Editor's Note:—*The author of this article, begun last month, is the wife of Joseph B. Wertz, winner of the 1930 Le Brun Traveling Scholarship. The story is based on their trip abroad and is offered in the belief that other draftsmen and young architects may be thereby encouraged to take their wives along when they set out for European studies.*

I was elected to keep an itemized budget which is psychologically good for extravagant wives. Of course there are some things you will be particularly glad your wife is there to pick out, lasting things for your home that can have come only from Europe, like those fascinating book ends made from part of the quaintly carved and painted Sicilian descendents of the Roman chariot, the Spanish shawls which my husband laughingly insists we "did" even better than Spanish Architecture, and the little pepper mills to be found on the dining tables of all French households, which will mystify and delight your own dinner guests. These things are sound investments in the subtlest form of advertising there is. When you get them home they speak for themselves, even to the uninitiate—and how many lone men can shop successfully for the relatives who always expect something from Europe? The saying that two heads are better than one applies especially to husband and wife whose interests are more nearly one than those of any other two people. Besides, if things are bungled and a precious day is lost and you have to stay at a more expensive hotel than you really should have afforded, then at least what recriminations there may be, are "in the family" and nobody else's pocketbook has been depleted.

The necessity of planning and replanning the trip even before sailing is too little appreciated. After you get over there you can revise parts according to the tips you get from friends. The architect's rendezvous in Paris is at the Café des Deux Magots on the Rue Bonaparte, across from the church of St. Germain des Près. There you are almost always sure of running into someone you know even though you may not have realized that he was in Europe at all. People always seem a little flattered to be asked to give advice and go over maps to mark the towns they most enjoyed and swap *pension* and hotel addresses. We got some of our most valuable tips about countries we were unfamiliar with in that way. If you stick to the official hotel guides put out by the national touring societies, which I will list later, you will seldom go wrong. These books give you the latest information on every detail of what the three grades of approved and regularly inspected hotels offer—also a full price list for all charges, which is a great help. There is even a note as to the date of the beginning and ending of the season for each particular locality and how much extra the *hôtelier* is then authorized to charge. Fortunately, we happened to arrive either just before or just after the official season in many places, and the weather was often as agreeable as though we had paid more for it. Of course, festivals are something you will want to see a few of, and these cost extra too. But the historic presentation of the famous wine drinking episode which saved the gorgeous little town of Rothenburg on Tauber from destruction would have been worth three times what we may have been overcharged for lodging, though we were not aware of extra high prices. It is a good idea to make a list of these historic festivals which you can get from any travel agency for all the countries, and take them into consideration when planning the itinerary. For economy's sake the trip should be so planned that no steps need be retraced, and when one has several months to stay abroad, it is best to follow the seasons South. Spring is loveliest everywhere—but then, spring comes in January in Sicily. Even so, the days do grow alarmingly shorter towards our winter months, unless you go really South toward the Equator which is in central Africa. Most people think of Rome and Madrid as being very South, when as a matter of fact they are at nearly the same latitude as New York. True, they are subtropic in temperature but in November it grows dark by five o'clock. In Spain, where the conventional dinner hour is seldom earlier than nine P.M., one has a stretch of five hours when sightseeing is impossible, the populace all goes to the movies, and we found it an excellent way to enlarge our Spanish vocabulary as the talkies had fortunately not yet invaded Spain.

One should have several good contour maps which are not always easy to find. Study them carefully for routes if your car is low in horsepower, because, while you *can* climb the mountains, it takes time. The scenery may be gorgeous but architects are excusably more interested in the man-made scenery of the towns, and a route mapped along a valley often means a day saved, though the actual distance may have been shorter over the hills. In Spain, though, the magnificent roads are so well graded that you wind your way over a dozen mountain ranges a day without realizing it, and Italy has a marvelous system of *Autostradas* built without grades, curves, or crossings, and entirely for the use of pneumatic-shod vehicles. There is no speed limit but you must pay a fee for their use. You will probably find the worst roads are the cobblestone ones in Belgium, but that country is very small. Germany was the next offender with some long gruelling stretches, which may be repaved by now. Never let a book on motoring conditions influence you unless you are sure it is up-to-date. We were nearly frightened out of motoring through Italy by a well-meaning little volume recommended by Brentano's in Paris which we did not notice had been written two years before. It might have been written before the flood so far as the improvement in roads and motoring conditions in Italy were concerned.

England has paved every tiny byway and France has good roads too, with the result that tires wear a long time and chains are seldom necessary. However, in addition to a good patching kit you will be glad of a small hand vulcanizer for use between the larger towns where only you can get vulcanizing done. Then there are many occasions for a soldering kit and how often we wished for a handful of assorted washers, nuts, bolts, etc. A tow rope is a comforting addition to the usual tool kit and some soap for smearing over impromptu gas leaks which are sometimes called forth by the ungodly jolting over cobblestone streets. A flashlight is often a help in reconnoitering in

When sketching in Venice, be prepared for crowds of interested bystanders.

dimly lit garages. While on the subject of garages let me add that when you ask the price of overnight storage, and have been told, it is wise to say—"Oh but it is only a little car of six or (whatever the case may be) horsepower." Eight times out of ten, in France at least, the price will be lowered. Americans spent their money so conspicuously just after the war when the exchange was so much in their favor that the thrifty French have come to believe all Americans are simply rolling in wealth. If the car is not in evidence when you inquire about storage, they will take it for granted that it is a big limousine, taking up much space. We found in most garages that there were rules about leaving the car doors unlocked so it could be moved if necessary, but as we left the bulk of our luggage in the car it was imperative that the car be well fastened. Although it was a sedan, only one door locked with a key. The three others fastened with little hooks from the interior and these were continually being torn loose by husky garage men bent on moving the car during the night. In vain we protested the damage; then my husband had the bright idea of removing all the exterior door handles save that on the door which locked by key, and we never had anything taken out of the car.

Every inch of space in the back of the car had to be utilized and we found that little mesh hammocks like those in our sleeping cars could be strung up on the sides and even ceiling of the car and were grand for carrying extra gloves, maps, guide books for quick reference, bags of apples for munching enroute, etc. There really is a big advantage in not looking too prosperous. Most of the time our 1926 model Renault looked positively disreputable, but since we struck a wet year and rain followed us everywhere we probably could not have kept it shined up if we had wanted to. At the borders our more important looking neighbors were usually searched, while one glance at us and our painting paraphernalia was enough for the officials who waved us across some thirteen frontiers with only two mild attempts at searching our bags. When difficulties do occur, often a wife who smiles sweetly, droops as though very tired, explains that she and her husband are students and that they find this particular country very beautiful, will smooth matters out. Invariably the most hard boiled official will respond to the expression of appreciation for the beauties of his native land. Clara E. Laughlin reminds you charmingly of this and other secrets of happy traveling in her series of splendid guide books of which the earliest and perhaps the best is entitled "So You're Going to Paris." We found that she can always be relied upon to give you the atmospheric, less obvious aspects of a place, while the inevitable Baedeker gives every single fact imaginable. The Blue Guides can be had for nearly every country and are also good. There is a little volume called "Traveling Light," worth getting for Spain supplemented by a "Satchel Guide for Spain and Portugal" by Crockett or the more detailed Baedeker. Then there is an excellent little booklet published by the International Casement Company called "Architectural Tours in England." It is given gratis to Architects, for whom it is especially compiled.

The official hotel guides can usually be had at national touring information headquarters. If you join the National Touring Club of each country you expect to spend much time in (and this is most emphatically worth the very small outlay), you are usually given the hotel information along with points of interest, garage addresses (always take your car to the garage that specializes in its make), maps of the more important cities, etc.—all in the club handbook for the year. The English Royal Automobile Club and the A.A. are both good and give perhaps the most service of any European clubs. This includes free advice on legal and insurance matters which you will want to know, advice on the purchase of second-hand and new cars, routes for your itinerary, representatives to help you at the channel crossing, men with repair kits bicycling along the roads in England ready to help members with minor repairs, even a system of traffic officers at all dangerous crossroads looking very cheery in bright scarlet slickers on rainy days. One can get about in England fairly well without maps since it is easy to ask the way and to understand the instructions which always seem to be summed up with a smiling "You cahn't miss it, sir." We seldom did.

The Touring Club Francais publishes a very complete handbook with more reliable hotel lists than those in the Michelin guide, but the latter should be gotten because of its excellent system of mapping the main routes through every town, which is a great time saver. We also joined the Touring Club Italiano which publishes a good handbook, gives its members a handsome brochure of photographs and a button to wear which entitles one to a discount on storage at some garages, particularly valuable at Mestre where the car must be left before entering that totally car-less city, Venice, where we made one of our longest stops.

There is also an official Italian hotel guide published by the E.N.I.T. and called *Gli Albergi in Italia* and you can get a mammoth *Guia Official* in Spain for five pesetas (sixty cents) at the Patronato National del Turismo, of which there is an office in every important town. They also publish good up-to-date little automobile route maps of Spain in four sections, which cost you nothing, along with a wealth of folder information in English on the places of interest.

You can get the splendid Michelin maps and guides for Spain, France, Belgium, and Switzerland but they are much more expensive than in their native land, France. However these Michelin maps are the best to be had. They even put out a two-section map of France—*La France Coupé en Deux*—four times a year to show the conditions of the roads. You say you want it *pour l'état des routes.* Every country should adopt this idea. For England, besides our little "Architectural Tours in England," which gives groups of mapped tours, we found Bartholomew's quarter-inch to the mile contour maps very good. In Germany we used the *B.Z. Autu Karte* in small sections

with plans and routes through all large cities on the reverse side. For Italy there is the *Carta Automobilistica D'Italia,* put out by the Automobile Club Milano in two folios and the equally good, more detailed map in several sections published by the Touring Club Italiano. One thing which we were unable to find was a dictionary of French motoring terms. I had to pick up a totally strange mechanical vocabulary as we went along, so it may be a help to list briefly what I learned, following the tables of running costs for the car as well as for our accommodation and food.

The six horsepower Renault, five seater sedan model 1926, was purchased for $280. Minor costs including tax per horsepower, the driving license, the *carnet de passage* (which we preferred to *triptiques*), dues for the three clubs we joined, and for various accessories, amounted to $60, bringing the original outlay to $340. Of this amount, $20 was refunded for the *carnet de passage* at the end of the trip, and the resale of the car for $160 gave a net cost of $180 for car and equipment. The table below is computed on the basis of running cost per mile for the trip which covered some 9,400-odd miles.

Gasoline	$.0125	per mile
Oil	.0022	" "
Storage (nite)	.0045	" "
Repairs	.007	" "
Miscellaneous (such as maps, taxes per day, etc.)	.0110	" "
Total	$.0372	per mile
Depreciation	.0192	" "
Grand total	$.0564	per mile

The following table is taken from an average of pension rates, including bed, breakfast, lunch, and dinner per day for one person, though in France, where two persons share the same room, rates are slightly lower.

France	45 francs	per day	$1.80
Italy	38 lira	" "	2.00
Spain	13 peseta	" "	1.56
England	12 shillings	" "	3.00
Germany	10 marks	" "	2.40

It must be born in mind that this applies only to the more modest type of accommodation where generous tips in addition to the 10% for service generally charged on the bill, are not expected.

The total average cost of our seven-month trip was $10.00 a day for the two of us. This includes the steamer fare over and back, the car with all its attendant expenses, our hotel and restaurant bills, and a minimum of amusements, gifts, and new clothing.

Our Mechanical Vocabulary

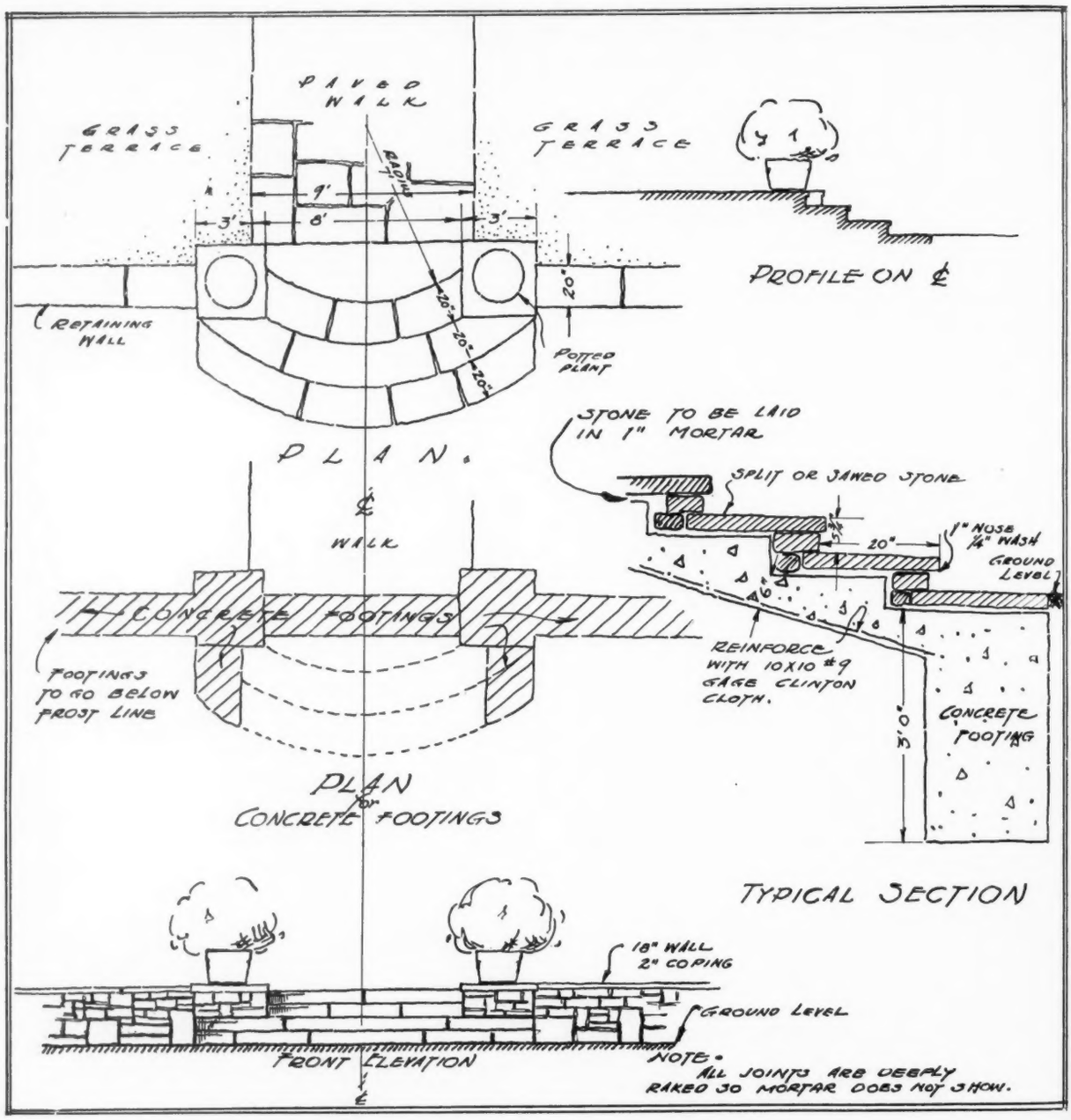
English	French
air pump	*gonfleur*
axel (back)	*pont arrière*
brakes	*les freins*
battery	*la batterie*
ball bearings	*roulements*
carburetor	*carburateur*
closed car	*conduit intérieur*
contact point (platinum)	*vis platinée*
to crank (by hand)	*mettre le moteur en marche avec la manivelle*
the crank	*la manivelle*
crank case	*carter*
electric bulbs	*les lampes electriques* or *ampoules*
gasoline	*essence*
1 gallon	*cinq (5) litres*
generator	*dynamo*
horn	*klaxon*
ignition (switch)	*contact*
kerosene	*pétrole*
map	*carte* or *plan*
main bearing	*vilebrequin*
1 mile	about 1⅜ *kilomètres* (1 km. is ⅝ of a mile)
oil	*huile*
pistons	*les pistons*
rim (of tire)	*la jaunte*
sparkplug	*bougie*
speedometer	*compteur kilométrique*
springs	*les ressorts*
self starter	*dimmarreur*
short circuit	*court circuit*
steering wheel	*volant de direction*
tire	*pneu*
tube (inner)	*chambre à air*
valve	*valve*
valve plug	*soupape*
vulcanize	*vulcaniser*
washer	*rondelle*
wheel (of car)	*roue*
window of car (glass)	*glace de portière* or *vitre de portière*
to reline brakes	*changer la garniture des freins*
to tighten brakes	*régler les freins*
to blow horn	*chanter* or *sóuffler*
to slow up	*ralentir*
to fix flats	*réparer les pneus*
to take the engine down	*démonter le moteur*
motor trouble	*ennui avec le moteur* (or) *le moteur en peine*
please pump up my tires	*voulez-vous faire gonfler mes pneus, s'il vous plait?*

The foregoing vocabulary is obviously far from being a very comprehensive one, but if you inquire at establishments catering to an English-speaking clientele, they will doubtless help you to enlarge it.

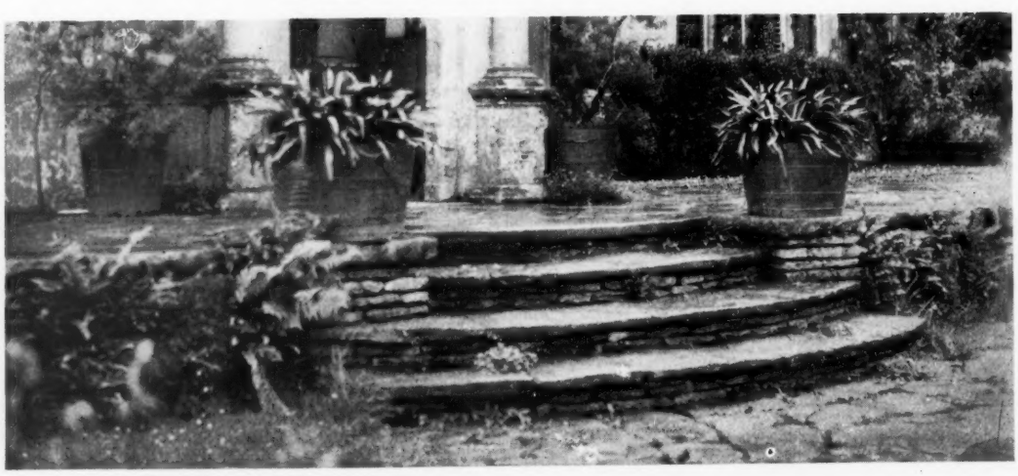
In summing up, it may be well to warn you that at first one is apt to get painfully tired, and that the adjustments to an environment which changes from country to country, the feeling of being thrown entirely upon one's own initiative, as well as being thrown rather inescapably together, especially unless one speaks some French—all these combined make things seem more difficult than they really are. Minor tragedies loom large at the moment, to be looked back upon from the perspective of a few weeks as the most amusing larks. And how richly the whole trip together is worth any number of trivial inconveniences!

We were certainly not wealthy, and after seven months of continual moving from country to country we were still on somewhat better than speaking terms, though we had our share of petty mishaps. Still, we enjoyed it all immensely, and I think we got a lot out of our investment.

And lastly, it may help to remember this: as Clara E. Laughlin says—"A thoroughly enjoyable low-brow trip is worth more than a thoroughly miserable high-brow tour; but your travel need be of neither extreme. Plan your trip as if you were building a house. So much ground to cover, so much money to spend, such and such needs to consider. Don't think it's smart to be vague, indefinite, undecided—it's green!"



MEASURED AND DRAWN BY CAROL H. LAWRENCE



Photograph by Hannah I. Champlin

DETAILS OF GARDEN STEPS, ST. CATHERINE'S COURT, BATH, ENGLAND

WILLIAM SYDNEY WAGNER

1883—1932

Blank-Stoller, Inc.

William Sydney Wagner died on May 26th, following a brief illness at Huntington, Long Island.

He was considered one of the most brilliant and ablest of the younger men in the profession, and his untimely death has occasioned the deepest regret among his host of friends and fellow architects.

He was born in New York in 1883 and following a high school education he started to acquire his architectural experience with various firms in the city.

As a member of Atelier Hornbostel he rapidly developed, and won the Paris Prize in 1907. He devoted the following two and a half years to study at the Ecole des Beaux Arts. On his return he joined the organization of George B. Post and Sons, and shortly became a member of that firm.

In this connection he developed the entire Statler Chain of Hotels, excepting the Hotel Pennsylvania, and was also responsible for many other hotels and office buildings, among which is the Hotel Roosevelt, New York.

Recently, under the firm name of Bottomley, Wagner, and White, several other developments were added to his impressive list of achievements, chief among which is River House situated on the East River, one of the most remarkable of the great New York apartment houses.

His diversified ability as a designer and creator in architecture was coupled with a keen business sense—a rare combination, which, if he had been spared to the profession, would have been certain to have led to still greater achievements.

Besides both of his parents he leaves his widow, the former Mildred Zickler, of Orange, New Jersey, and a brother, Edwin D. Wagner, of the firm of Good & Wagner, Architects, of Akron, Ohio.—*Otto R. Eggers.*

DRAFTSMAN'S DATA SHEETS

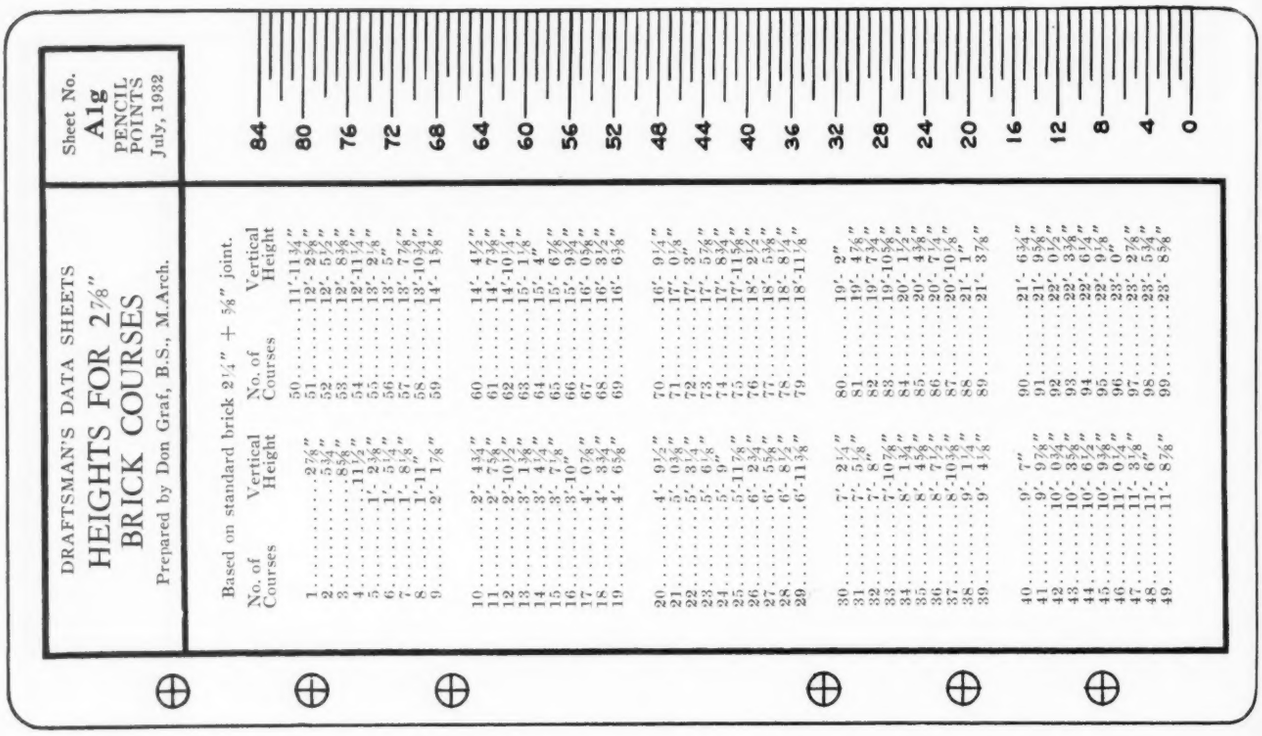
Four of these sheets appear in PENCIL POINTS each month. Practical, live, up-to-the-minute information will be contained on the Data Sheets, constituting a compact handbook for instant reference. The loose-leaf arrangement makes the only ideal way of maintaining an up-to-date book on constantly changing architectural information. Readers are urged to make suggestions and criticisms of the Data Sheets. Write to Don Graf, in care of PENCIL POINTS, 419 Fourth Ave., New York.

Reprinted Data Sheets. For those who do not like to destroy their copies of PENCIL POINTS, the first 24 Data Sheets which have appeared are now available, printed on heavy bond paper, all cut and punched, for seventy-five cents a set.

Celluloid Indices (Indexes to you). If there are enough who would like these with tabs printed for the main headings, "Materials," "Structural," "Mathematics," etc., at fifty cents (five zloty, forty drachma) a set, they will be made up for you. A set of division cards is a great convenience in finding the sheet you want quickly, so send in your request with your order for the reprints.

Acknowledgments. Thanks for comment, inquiries, and suggestions from: E. H. Carleton, Fritz Kruger, John W. Siegle, Joe B. Courtney, A. F. McGimpsey, Robert M. Little, Lyman R. Flook, Martin Zimmerman, Conway L. Todd, A. K. Rigast.

Correction. On *Data Sheet E1a* which appeared in June, make the fourth and fifth lines read, "The water supply should *NOT* be on the down-hill side of the sewage disposal system."


DRAFTSMAN'S DATA SHEETS
HEIGHTS FOR 2⅞" BRICK COURSES
Prepared by Don Graf, B.S., M.Arch.
Sheet No. A1g
PENCIL POINTS
July, 1932
84 80 76 72 68 64 60 56 52 48 44 40 36 32 28 24 20 16 12 8 4 0
Based on standard brick 2¼" + ⅝" joint.
No. of Courses
Vertical Height

DATA SHEET NO. A1g. *This is the sixth Data Sheet giving a scale for drawing brickwork and a table for dimensioning. The seventh and last will appear in the September issue, thus covering all the usual heights from 2½" to 3¼", inclusive.*

J. E. R. CARPENTER, A. I. A.

1867—1932

Blank-Stoller, Inc.

Mr. Carpenter's sudden death, on June 11th, while at work in his New York office, deprives the architectural profession of a fellow member who has put his heart and best efforts into creating a new skyline in many cities in the United States. To those of us who have known Mr. Carpenter —I have known him almost thirty years— was to be really fond of the man. The reporting of his death refreshes our memory. We see him devoting himself to his work in Tennessee, Alabama, Georgia, and Florida where the first tall buildings in the South were erected under his guiding influence. What American architect who might not be proud of the success attained in the Hermitage Hotel in Nashville, The Empire Building in Birmingham, and the American National Bank in Pensacola, all erected before 1910.

It was not in the South, however, that Mr. Carpenter was to achieve his greatest success, for his most important work is in New York. He was born in Columbia, Tennessee, on January 7, 1867, graduated from the University of Tennessee, and went forth to Cambridge to study architecture. He graduated from M. I. T. in 1887. Henry D. Bates, of Bates and Guild, architectural publishers, was a classmate of "J. E. R.," who was not forgotten in later years when the old *Architectural Review* needed a helping hand. The Ecole des Beaux Arts was the next step for Mr. Carpenter after leaving M. I. T. He returned to America to hang up his "shingle" in Norfolk, Virginia, where he practiced his profession for several years.

The skyline of Park Avenue and Fifth Avenue was not to remain unchanged after his arrival in New York. A believer in the aesthetic as well as the material value of the tall modern apartment house, Mr. Carpenter, more than ten years ago, urged that this type of dwelling should replace the older single family houses on upper Fifth Avenue. He brought the successful test case that overcame the earlier ruling that buildings in this section must not exceed seventy-five feet in height. He thus prepared the way for the new skyline of the district. Over fifty apartment houses which line Park Avenue and the east side of Fifth Avenue as far as Ninety-sixth Street have been designed by Mr. Carpenter. 907 Fifth Avenue, erected in 1916, was awarded the Gold Medal of The American Institute of Architects. Subsequently, Mr. Carpenter received a diploma of merit from the International Exhibition at Turin for the design of this building. In 1928 The New York Chapter of the A. I. A. awarded a gold medal for the design of the apartment house at 819 Park Avenue. In all Mr. Carpenter has received four gold medals for his apartment houses and we realize that excellency should be recorded as well as quantity of projects. The tremendous Lincoln Building at 42nd Street and Vanderbilt Avenue is one of his accomplishments, in association with several other New York architects.

Mr. Carpenter married Marion Stires, sister of Bishop Ernest Stires of the Protestant Episcopal Diocese of Long Island, and is survived by his wife and a daughter, Mrs. Arthur C. F. Kelleher.

To the names of over sixty members of The American

Institute of Architects whose deaths have been reported during the past year we must add J. Edwin R. Carpenter. We will sorely miss the ardent enthusiasm and unfailing kindness which we have enjoyed in our personal association with the man who made big plans, who was actively interested in the architectural press, and whose recorded work and deeds will live long after his death.

—*Russell F. Whitehead*

NEW YORK CHAPTER, A.I.A., ELECTS OFFICERS

Charles H. Higgins has been elected president of the New York Chapter of the American Institute of Architects for the coming year. Mr. Higgins, a former member of the City Planning Commission of Jersey City, succeeds Stephen F. Voorhees.

Dwight James Baum, recent winner of the gold medal awarded by Better Homes in America for the best two-story house constructed in America between 1926 and 1930, was elected vice-president, to succeed Julian Clarence Levi. Other officers named were Eric Kebbon, secretary; Frederick Mathesius, Jr., treasurer; and Christopher La Farge, recorder.

ROTCH SCHOLARSHIP DRAWINGS

Coincident with the announcement in the June issue that the winning design, by Carroll Coletti, in the Rotch Scholarship Competition would be published in this issue we asked Mr. Coletti to supply us with either his original drawings or photographs, from which we could make reproductions. We regret that owing to the fact that Mr. Coletti was unable to send us the drawings or photographs we are unable to present the reproductions as promised.

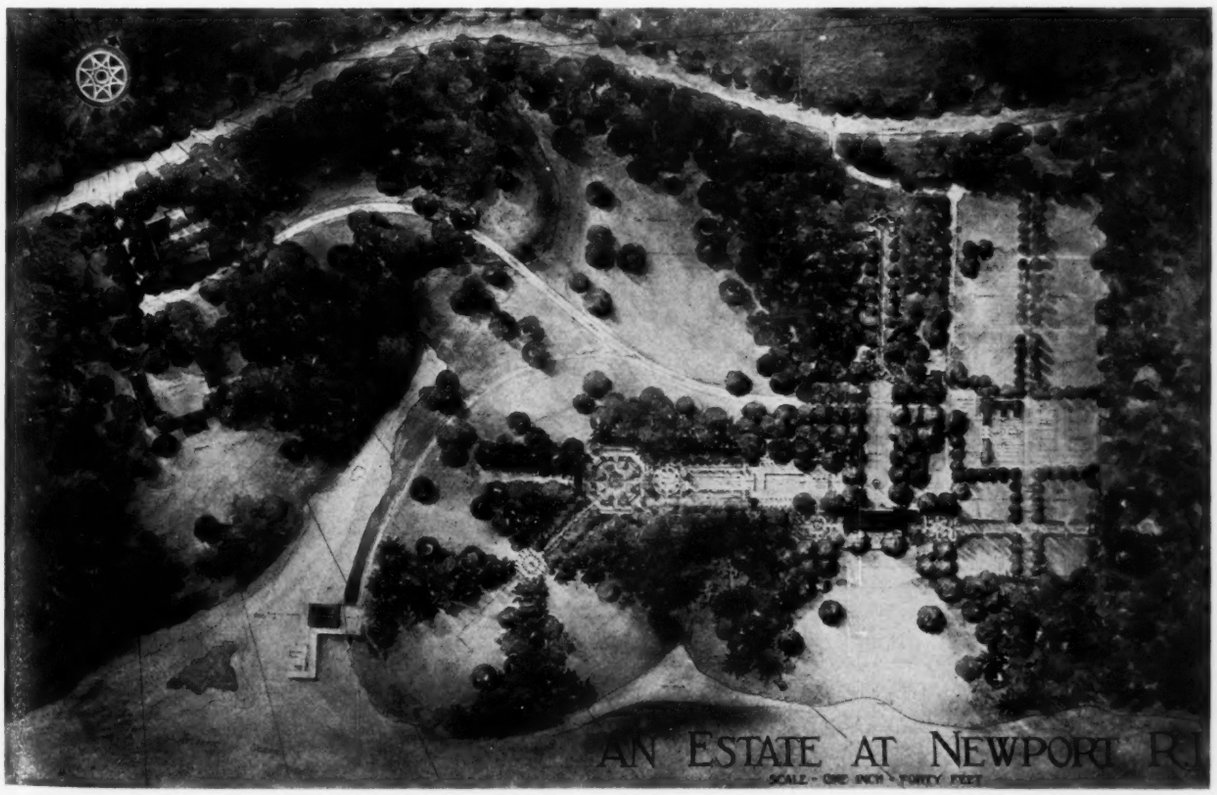
ILLUMINATING ENGINEERING SOCIETY

PRIZES AWARDED TO STUDENTS

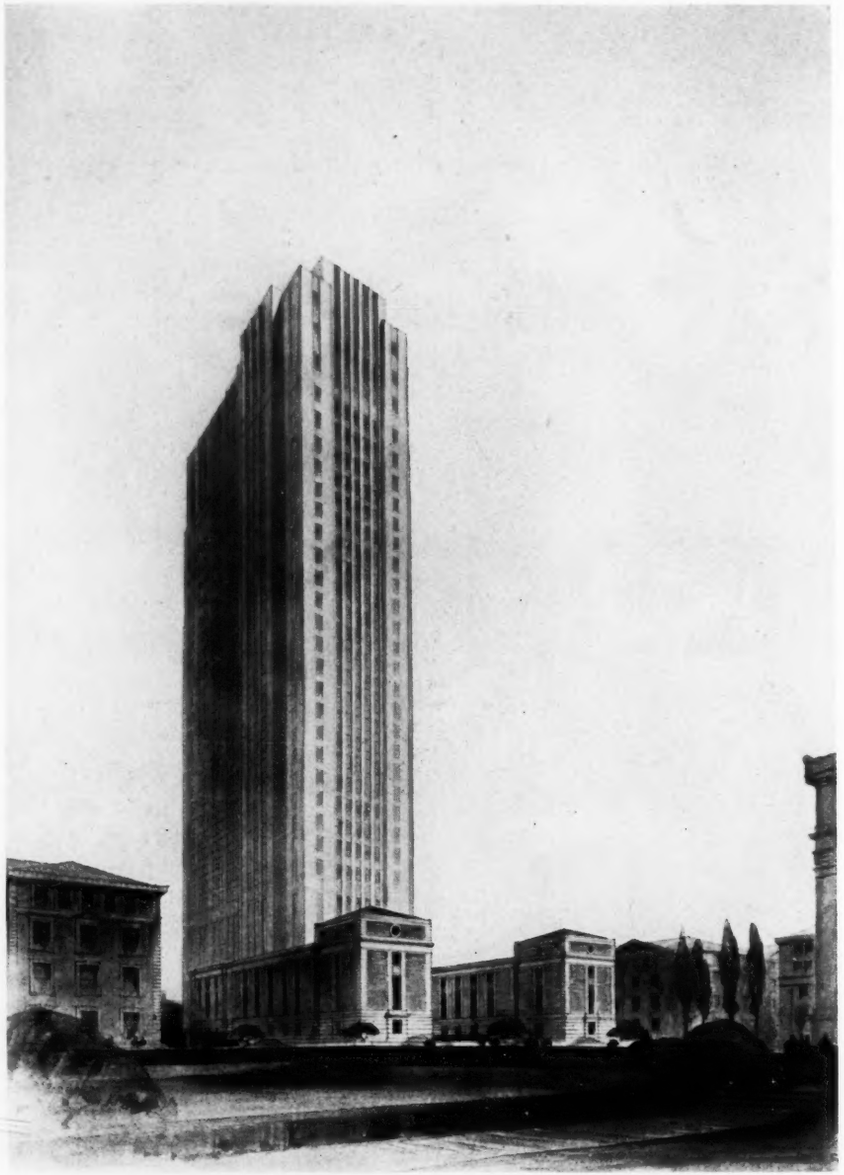
This competition was open only to students of Class A design of the Beaux-Arts Institute of Design. The program called for *A Great Hall for the Electrical Building at the World's Fair* in Chicago. The problem was to arrange decorative effects of illumination. More than two hundred and fifty students, representing sixty-seven colleges, were in the competition. It marked the first time that light has been considered an integral part of architectural design and not as a necessary embellishment installed in a building after it has been completed.

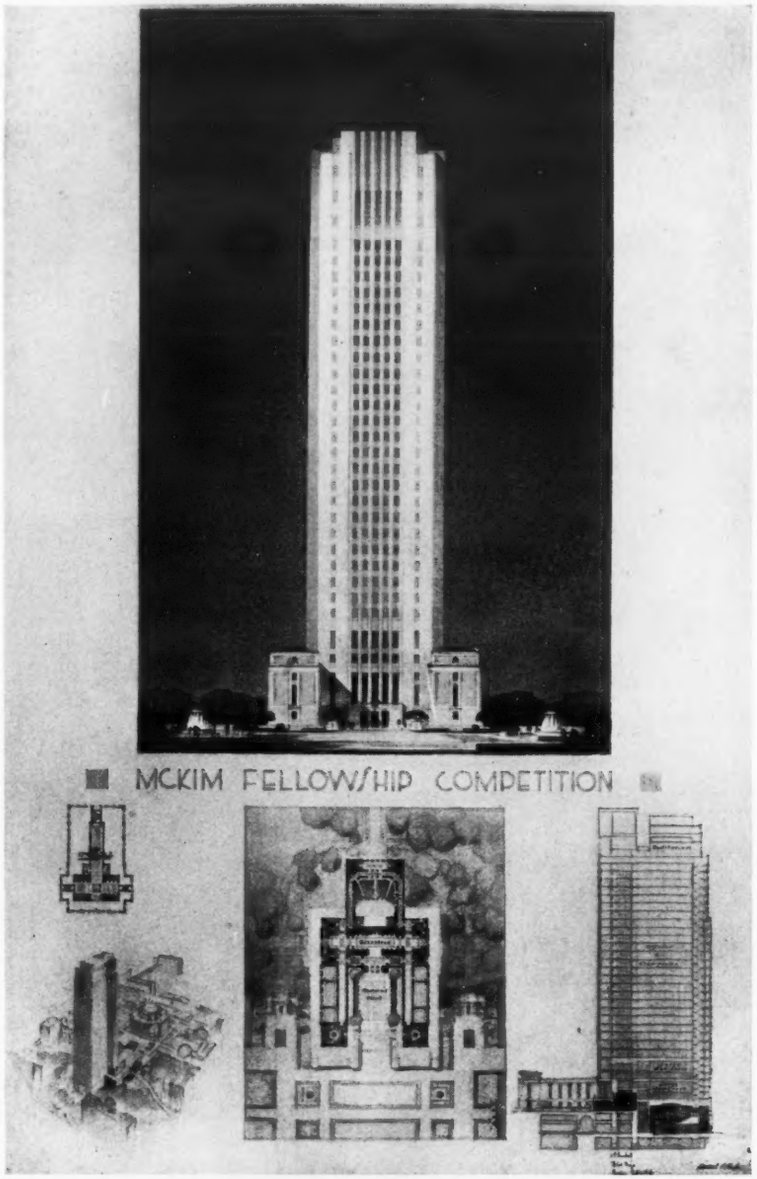
The first prize of $750 was awarded to E. A. Young, a student of Atelier Adams-Nelson, Chicago. Second prize of $250 was awarded to A. E. Alexander of Catholic University of America, Washington, D. C.; third prize of $150 went to H. L. Kamphoefner, of Sioux City, Iowa; fourth prize of $50 was awarded to F. O. Deeter, of the University of Illinois; fifth prize of $50 went to H. Tonsager, a student at Armour Institute of Technology.

The drawings were judged by a jury of architects composed of: Ely Jacques Kahn, Henry Ives Cobb, Harvey Wiley Corbett, William Adams Delano, Frederick G. Frost, John Theodore Haneman, Lansing C. Holden, William F. Lamb, Julian Clarence Levi, Electus D. Litchfield, Samuel R. Moore, Worthen Paxton, R. Doulton Stott, W. Pope Barney, Edmund S. Gilchrest, and Charles Z. Klauder. Members of the illuminating engineering profession who acted on the jury were D. W. Atwater, J. W. Barker, Foster Gunnison, Chairman of the Committee on Awards, Samuel G. Hibben, Arthur Hendrickson, James Krieger, William F. Little, Stanley R. McCandless, C. D. McCarthy, A. L. Powell, Clarence L. Law, and Julius Daniels.



WINNING DESIGN, "THE DEVELOPMENT OF A PRIVATE ESTATE NEAR NEWPORT, R. I.," BY HENRI CHABANNE
COMPETITION FOR THE ROME PRIZE IN LANDSCAPE ARCHITECTURE, 1932





PRIZE WINNING DESIGN FOR "A COLUMBIA UNIVERSITY SKYSCRAPER," BY HOWARD EDWARD BAHR

COMPETITION FOR THE CHARLES FOLLEN MCKIM FELLOWSHIP OF COLUMBIA UNIVERSITY, 1932

McKIM FELLOWSHIP AWARDED

The Charles Follen McKim Fellowship of the Columbia University School of Architecture has been awarded to Howard Edward Bahr of Sayville, Long Island. The fellowship carries a stipend of $2,500 for study abroad. The second prize of $500 was awarded to James Sasso, of Brooklyn, N. Y., and the third prize, also $500, went to Joseph De Marco of Farmingdale, Long Island. Vincent Furno, of Hempstead Gardens, L. I., was first alternate; Hyman Roche, of New York, second alternate; Eugene Soniat, of New Orleans, La., third alternate.

The Jury of Award was composed of Dean Everett V. Meeks, of Yale University, Arthur L. Harmon, Harvey Wiley Corbett, Ely Jacques Kahn, and William Adams Delano, all of New York.

The purpose of the competition was to provide Columbia University with space for the future expanse of its ever widening activities. The problem included the alteration and completion of that part of University Hall south of the driveway which runs through the building at the lower level, and, in harmonious combination with it, the design of a new tall structure which will completely replace the portion of University Hall north of the driveway. The program stated that: "the building shall closely conform to the established style of Columbia architecture to the approximate height of the present buildings on the upper Campus, the new north portion expressing the horizontal lines of University Hall and blending with it, while above this level the tall part of the building shall be in harmony with the University group as well as reflect its own internal structure. This building is to be flexible to accommodate every type of space required, with every facility for offices, classrooms, laboratories, and so on. The construction is to be such that the exterior would all be finished at one time, but the interior would be completed from time to time in such manner as may be needed. The structure would contain the equivalent of all space now on the Campus which is used for educational activities. The cubical contents of such a building would be about 12,000,000 cubic feet which would cost from six to seven million dollars. Comparing this with Avery Hall, the building that houses the School of Architecture, it would cost less per cubic foot and contain the equivalent floor space of thirty to forty similar buildings." Mr. Bahr's winning design is shown opposite.

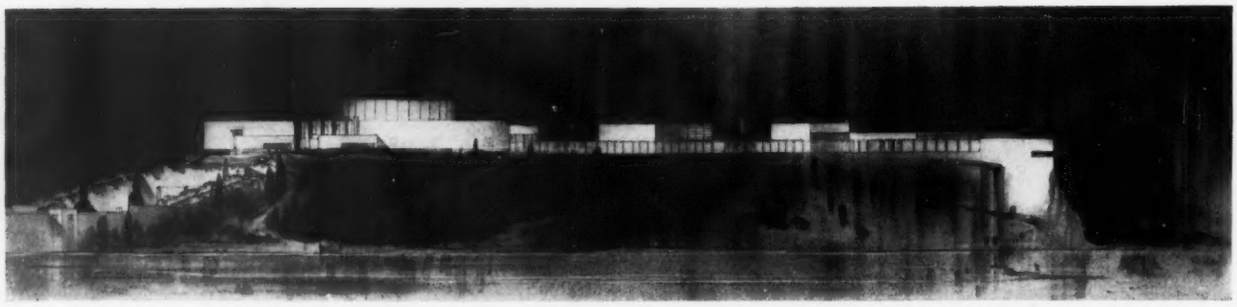
HOWARD EDWARD BAHR

Howard Edward Bahr, the winner of the Charles Follen McKim Fellowship of Columbia University, was born in Sayville, Long Island, July 24, 1909. Mr. Bahr received his preliminary education at Sayville High School and entered Columbia in 1925. He was granted the degree of Bachelor of Arts in 1929 and continued his professional study in the School of Architecture. At his graduation he was awarded the Medal of the American Institute of Architects for the highest standing in his class and also the Alumni Medal for proficiency in design. The degree of Bachelor of Architecture and the Graduate Fellowship were both awarded Mr. Bahr in 1931. At the end of a year of graduate study the McKim Fellowship and the degree of Master of Science in Architecture were awarded him.

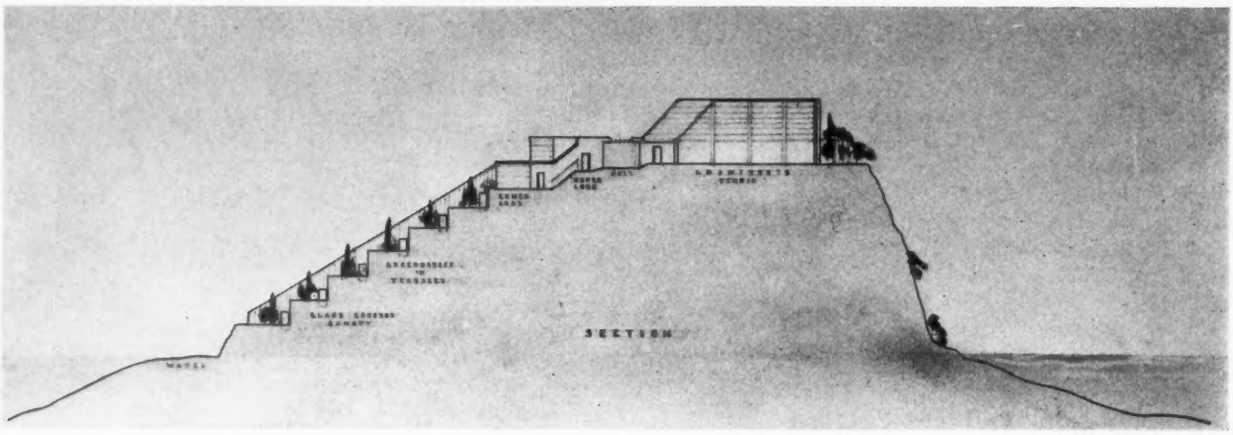
Mr. Bahr received his professional experience in the offices of Lafayette A. Goldstone and J. H. Phillips, both of New York.

He wishes to express his appreciation to his critics: George Licht, Edgar I. Williams, and Professor Dillenback, and to Dean William A. Boring for the encouragement and advice they have given him during his scholastic career.

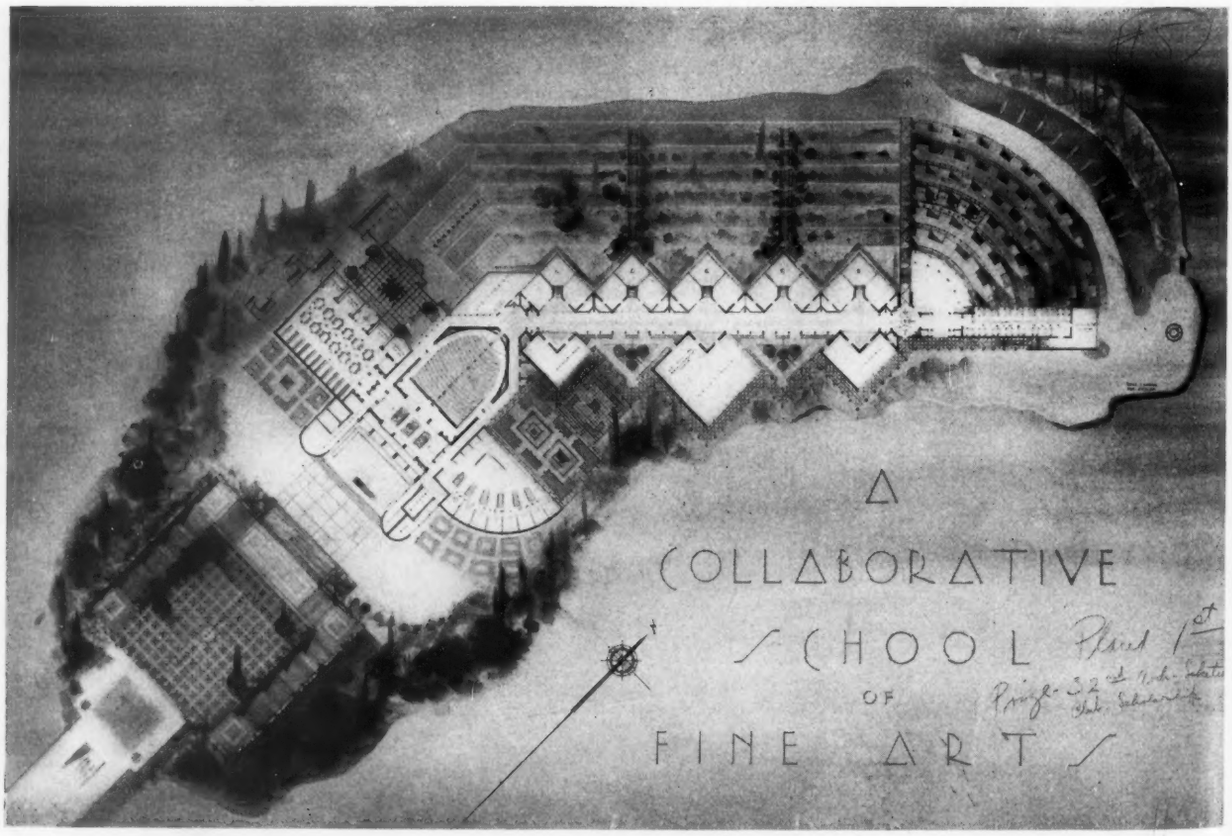
MEMBERS OF THE CHICAGO TECH ARCHITECTURAL CLUB AT THE WORLD'S FAIR GROUNDS
THE HALL OF SCIENCE BUILDING MAY BE SEEN IN THE BACKGROUND



ELEVATION



SECTION



PLAN OF WINNING DESIGN FOR "A COLLABORATIVE SCHOOL OF FINE ARTS," BY ROBERT B. BROUT

COMPETITION FOR ANNUAL FOREIGN TRAVEL SCHOLARSHIP OF THE ARCHITECTURAL SKETCH CLUB OF CHICAGO

DRAFTSMAN'S DATA SHEETS
STANDARD DIMENSIONS OF SOFTWOOD LUMBER
Prepared by Don Graf, B.S., M.Arch.

Sheet No. **A5a**
PENCIL POINTS
July, 1932

THICKNESSES (S1S or S2S)

Nominal	Actual
5/16	5/16
7/16	7/16
9/16	9/16
11/16	11/16
1	25/32
1¼	1 5/16
1½	1 5/16
1¾	1 5/16
2	1 5/8
2½	2 1/8
3	2 5/8
4	3 5/8
6	5½
8	7½
10	9½
12	11½
14	13½
16	15½
18	17½
20	19½
24	23½

WIDTHS (S1E or S2E)

Nominal	Actual
2	1 5/8
3	2 5/8
4	3 5/8
5	4 5/8
6	5 5/8
7	6 5/8
8	7½
9	8½
10	9½
11	10½
12	11½
14	13½
16	15½
18	17½
20	19½
22	21½
24	23½
26	25½
28	27½
30	29½

LENGTHS. Come in multiples of two feet only, except as follows: 2x4, 6x8: 9' and 11'; 2x8, 2x10: 13'; 2x10: 15'; 8x8, 10x10, 10x12, 12x12, 14x14, 16x16, 18x18: 11' and 13'; 6x16, 6x18, 8x16, 8x18: 15' and 17'.

ROUGH. It is understood that the standard dimensions of rough lumber are in excess of the dimensions of finished lumber of the corresponding nominal size, by the amount necessary to permit of surfacing either 1 side or 2 sides and/or 1 edge or 2 edges.

From "Lumber," Simplified Practice Recommendation R16-29, U. S. Dept. of Commerce, Bureau of Standards.

DATA SHEET NO. A5a. *This sheet shows an interesting aspect of the lumber jumble; that is, a six by six not only is not six by six but is not even square! A number of requests have been received for this sheet. It should be used unsparingly in figuring dimensions and in making F.S.D.'s.*

ARCHITECTURAL SKETCH CLUB OF CHICAGO

ANNUAL TRAVELING SCHOLARSHIP AWARDED

The Thirty-second Annual Foreign Traveling Scholarship of the Architectural Sketch Club of Chicago has been awarded to Robert Benedict Brout. The subject of the competition was: *A Collaborative School of Fine Arts.*

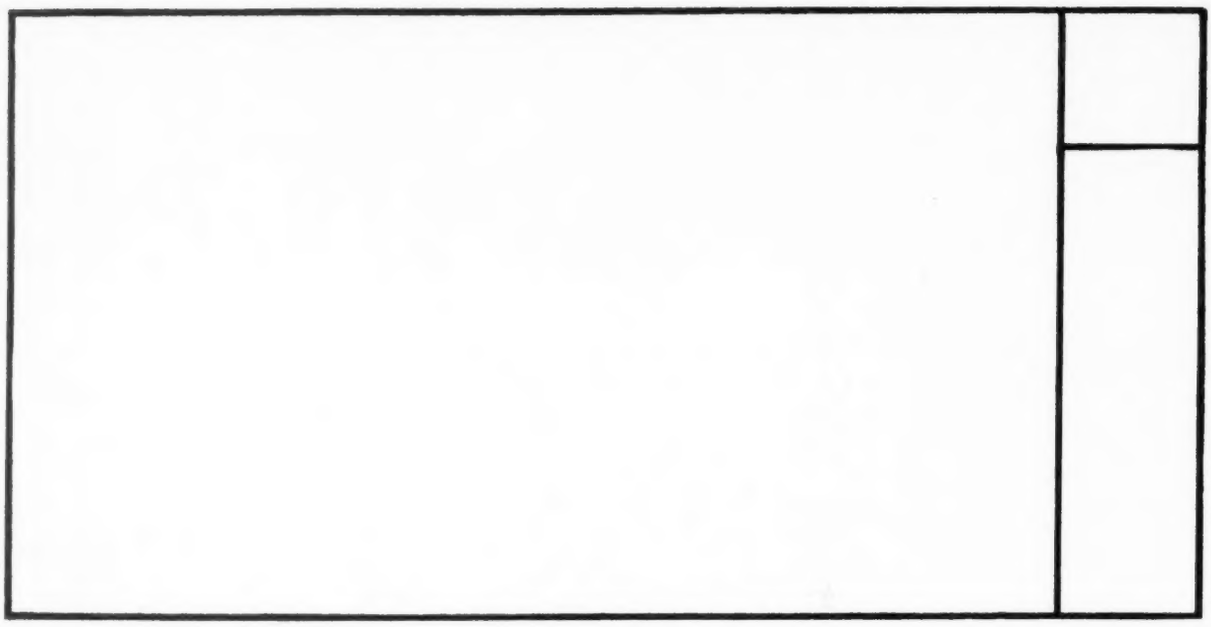
"The school shall stand as a permanent memorial to a distinguished citizen who during his lifetime saw the need for such a post-graduate collaborative school. Present-day graduates and post graduates of our American Universities are compelled to either enter schools abroad to further themselves under the guidance of foreign talent or travel abroad and search for themselves. It is intended in this movement to give American graduate students the opportunity of collaborating and learning from each other. The scholars will be selected from a list of meritorious students of high ideals. The setting and plan shall be so conceived that it will be conducive to inspirational work and thought. After three years, a scholar will be awarded the government diploma. The layout shall be designed to accommodate fifty students, twenty-five of whom will be architects, the other twenty-five sculptors, painters, and landscape architects.

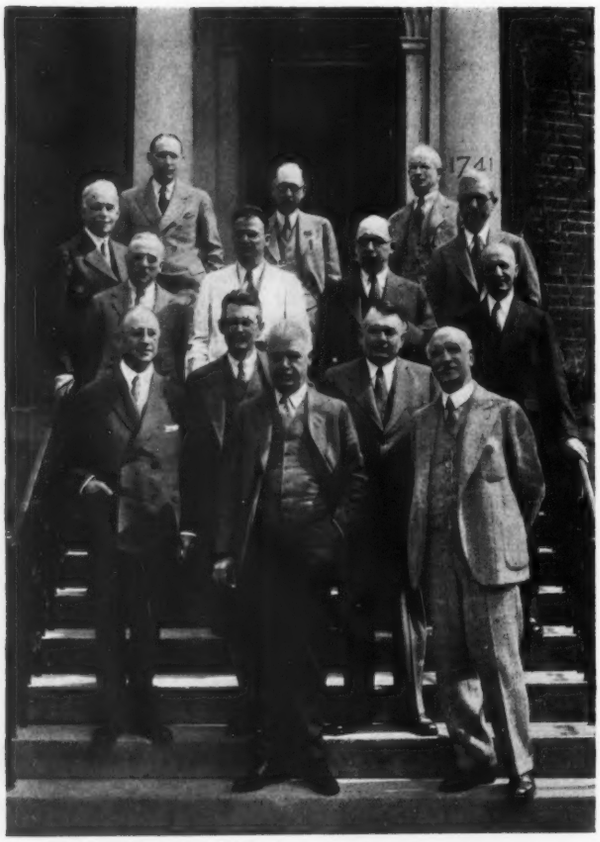
"The site is an island of 200,000 sq. ft. to which the nearest mainland is due south. Site may be connected to mainland by a bridge. The major requirements are: Auditorium, 500 seats; Exhibition Hall for temporary and traveling exhibitions; Architects' General Studio, approximately 3000 sq. ft.; Sculptors' General Studio, approximately 1500 sq. ft.; Painters' General Studio, approximately 1500 sq. ft.; fifteen loges for collaborative work, each approximately 400 sq. ft.; general lounge elegantly appointed; dining facilities with necessary services; large library, 2500 sq. ft.; generous propagating facilities for landscape architects; comfortable living quarters for students; a small laboratory for experiments of new materials, approximately 750 sq. ft.; administration, 800 sq. ft. Make provision for visiting professors in students' quarters, as there will not be any professors usually on the island."

Mr. Brout's winning design is shown opposite.

ROBERT BENEDICT BROUT

Robert Benedict Brout, winner of the Chicago Architectural Sketch Club Traveling Scholarship of $1200 for six months abroad, is a graduate of Crane Technical High School of Chicago. Mr. Brout then spent one year at Iowa State College in Architectural Engineering and three years at Armour Institute of Technology. Mr. Brout desires to take this opportunity to express his gratitude and appreciation for the ever constant and unfailing encouragement, instruction, and criticism of T. M. Hoffmeister during the course of his studies. Mr. Brout has also studied under Professor Albert Kreibeil and has been in the employ of Alexander & Brandt, Architects, of Chicago, for the past five years. He is a member of the Chicago Architectural Sketch Club and Atelier Adams-Nelson.





NEW OFFICERS AND DIRECTORS OF THE A.I.A.

FIRST ROW—*Ernest J. Russell, President; Charles D. Maginnis, 1st Vice President.* SECOND ROW—*Frank C. Baldwin, Secretary; Horace W. Peaslee, 2nd Vice President; Edwin Bergstrom, Treasurer.* THIRD ROW—*Frederick M. Mann; George H. Gray; Franklin O. Adams; M. H. Furbringer; Frederick H. Meyer; James O. Betelle.* FOURTH ROW—*Edward C. Kemper, Executive Secretary; Herbert E. Hewitt; Albert L. Brockway.*

AN UNUSUAL SHOPFRONT CONSTRUCTION

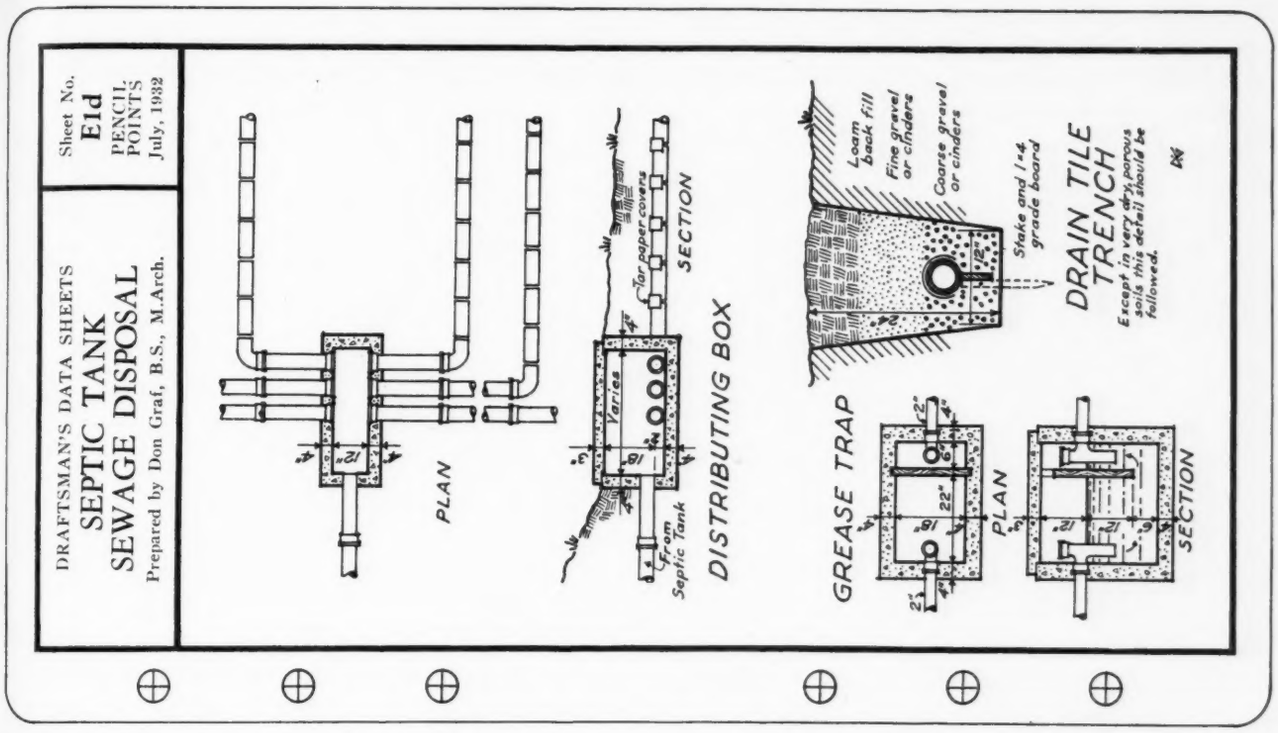
The storefront for the Dewitt Taylor Estate, Detroit, designed by H. Augustus O'Dell and Wirt C. Rowland, Associate Architects, will be of interest because of its unusual construction. The façade is built up of a combination of glass, aluminum, and porcelain enameled sheets backed with light weight concrete. The first two of these materials are well known architecturally and need no explanatory remarks but the porcelain enamel is comparatively new in this sort of architectural application. An experimental porcelain enamel house, designed by Charles Bacon Rowley & Associates and recently erected in Cleveland was shown on page 128 of PENCIL POINTS for February, 1932. This, and other experiments show a growth of interest in the exterior use of porcelain enamel.

In the case of this storefront, the enameled sheets were, except in one place, backed up with light weight concrete in slabs from two to four inches thick and these compound units used as face material. The idea of the backup of concrete was to reduce the possibility of expansion and contraction of the sheet metal ground work and to eliminate any chance of denting and chipping the enamel, while at the same time providing insulating and fireproofing value. Incidentally this treatment enabled the material to be used in larger units than would be possible with unbacked sheets, due to the natural warp and twist common to large surface areas of thin metal.

It will be noted on the construction detail that the groundwork for the aluminum letters on the awning hood was not backed with concrete owing to its projection in front of the façade. It was framed with wood and was carefully flashed with sheet aluminum to prevent penetration by the weather. (See details on page 508.)

The advantages claimed for the enamel surface are inexpensiveness, simplicity and ease of application, protection from rust, low cost of cleaning, durability of surface, and a wide range of controlled permanent colors.

The architects wish to acknowledge the helpful cooperation of the several material manufacturers who assisted in the execution of the work.



DATA SHEET NO. E1d. *This Data Sheet is the fourth of a series giving information on the proper design of a septic tank system for sewage disposal. Such a system for an isolated dwelling makes possible advantages of modern plumbing. (Ah, the beauty of a beautiful bathroom!)*

ARCHITECTS' CLUB OF CHICAGO

The rehabilitating of blighted areas is one of the club's major activities. Anyone interested in obtaining full information on the club's work in this field may obtain it by writing to Henry K. Holsman, 307 North Michigan Avenue, Chicago. The club's golf program for the year has been arranged. These tournaments, particularly the final one, have become major events in the Chicago metropolitan area.

NEW YORK ARCHITECTURAL CLUB, INC.

The New York Architectural Club, Inc., has moved its headquarters to 232 East 42nd Street, New York, above the Tudor Tavern. The Tavern is run by Skeets Hunt, an ex-draftsman, and he is reserving a table in the back room for members of The New York Architectural Club and their friends, so come around for lunch.

RICHARD J. NEUTRA TO TEACH DESIGN

The University of Southern California has announced a course in architectural design for graduate students to be conducted by Richard J. Neutra. Building projects will be related to the circumstances, methods, and purposes of production and consumption in present building activity and to current thought in city planning. For complete information write to Dean A. C. Weatherhead, University of Southern California, Los Angeles, California.

BROOKLYN CHAPTER, A.I.A., ELECTS OFFICERS

At the annual meeting of the Brooklyn Chapter of the A.I.A. the following officers were elected and installed for a year: William A. Sanders, President; Herbert C. Bowman, Vice-President; Daniel D. Streeter, Treasurer, and Alexander Mackintosh, Surveyor. George F. Keese was reelected Secretary. Mr. Wagner, the retiring president, paid tribute to the members and thanked them for their loyal support during the term of his office.

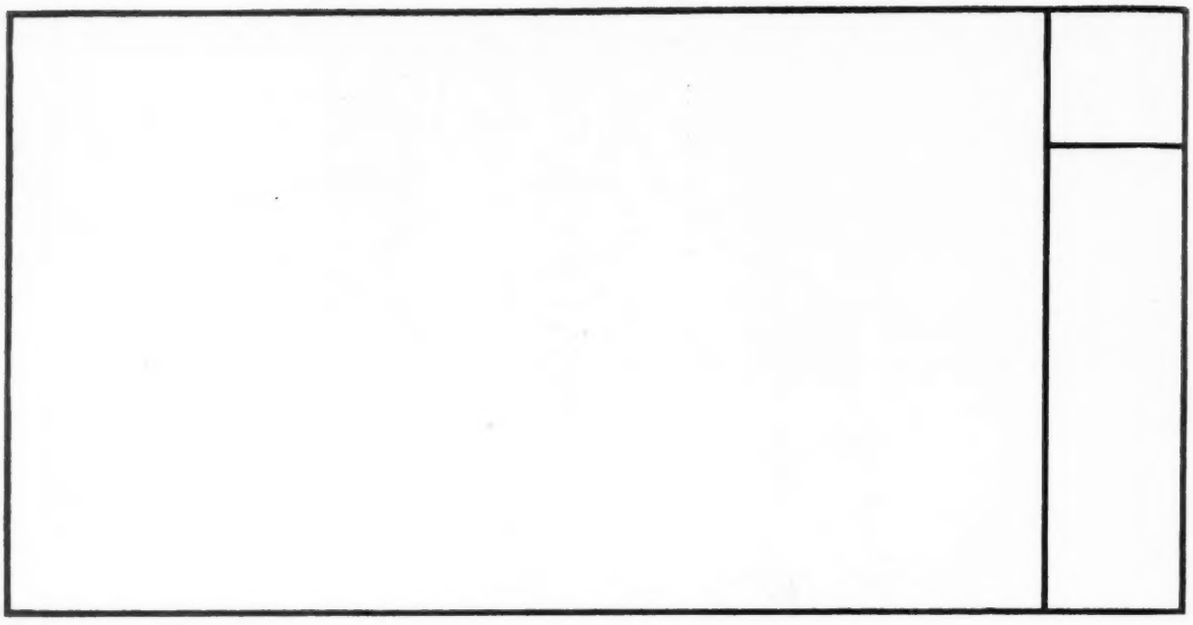
HENRY GILLETTE WOODMAN SCHOLARSHIP

AWARDED TO LEONARD LE GRANDE HUNTER

Leonard Le Grande Hunter, of Charlotte, N. C., has been awarded the Henry Gillette Woodman Scholarship in Architecture for 1932-33 of the School of Fine Arts of the University of Pennsylvania. The Scholarship, founded under the will of the late George B. Woodman as a memorial to his son, is awarded annually to a graduate in architecture at Pennsylvania. It provides the sum of $1,000 to be used for foreign travel.

Mr. Hunter was born in Charlotte, N. C., March 22, 1905. He entered the University of North Carolina in 1923 and after one year there went to the University of Pennsylvania where he received his B. Arch. and M. Arch. degrees in 1928 and 1929. Directly following this Mr. Hunter was engaged in architectural work in Egypt, from 1929 to 1931, with the Oriental Institute of the University of Chicago. During the past winter he was assistant professor of architecture at the Georgia School of Technology.

Mr. Hunter wishes to express his thanks to Dr. Warren P. Laird, Professor Harry Sternfeld and Professor Harry Parker of the School of Fine Arts of the University of Pennsylvania, and to Lewis F. Pilcher, formerly Assistant Dean of the School of Fine Arts.



BUILDING CODE REQUIREMENTS FOR CAST STONE

Of interest to architects, engineers, specification writers and others who may be called upon to cooperate in revising existing municipal building codes or in preparing new codes, is a suggested section on cast stone for inclusion in building codes. The requirements contained in this section have the approval of the Cast Stone Institute, a national organization working to improve and extend the use of cast stone.

"The term *cast stone* as used in this code," according to the definition given in the suggested section referred to, "shall be understood to mean a building stone manufactured from Portland cement concrete, precast and used as trim or facing on or in buildings and other structures.

"Cast stone shall have an average minimum compressive strength at the age of twenty-eight days, or when delivered on the job, of not less than five thousand lbs. per sq. in. and an average absorption of not more than seven per cent. of its dry weight.

"Samples from which test specimens will be cut shall be selected by the Commissioner of Buildings or his representative. In the event specimens fail to meet requirements in the first test the test may be repeated on a second set of specimens. Tests shall be paid for by the manufacturer.

"Tests for compression and absorption for cast stone shall be made on three 2″ x 2″ cylinders or three 2″ cubes cut from the stone as delivered on the job or from the regular stock in the yard. If not homogeneous throughout, specimens of cast stone to be tested for absorption and compression shall be taken in such a manner that they are composed of approximately one-half of facing and one-half of backing material and so that they can be tested in the position in which the cast stone will be laid in the masonry. Compressive strength and absorption tests on cast stone specimens shall be made in accordance with the American Concrete Institute tentative specification for cast stone (P-3-A-29T).

"No individual specimen used in the above prescribed tests shall vary more than ten per cent. below in compression nor more than ten per cent. above in absorption from the average requirements specified above. All cast stone shall be branded with a permanent identification mark of the manufacturer, which shall be registered with the Commissioner of Buildings."

DETROIT ARCHITECTURAL BOWLING LEAGUE

Final team standings:

	W.	L.
McGrath & Dohmen	47	37
Hubbard & Wagschal	45	39
Robert O. Derrick, Inc.	45	39
Malcomson & Higginbotham & Trout	44	40
Donaldson & Meier	44	40
Albert Kahn, Inc.	43	41
Weston & Ellington	39	45
J. Ivan Dise	29	55

Final individual standings (ten high):

Games		Average
81	Jolson (ROD)	192.4
81	Stegkamper (JID)	189.7
81	Kalsched (AK)	189.6
54	Carroll (M&D)	187.1
84	Gleasman (ROD)	187.0
69	N. Krecke (H&W)	186.6
76	Golder (M&H&T)	185.7
84	F. McCormick (M&D)	185.5
49	R. Fraser (M&H&T)	184.4
83	Meidell (M&H&T)	184.1

Individual high score—1 game—Golder and G. Schulz (both M&H&T)—276

Individual high score—3 games—F. McCormick (M&D)—672

Team high score—1 game—Robert O. Derrick, Inc. —1129

Team high score—3 games—Robert O. Derrick, Inc. —3029

Leading 200 scorer—Kalsched (AK) —27

DRAFTSMAN'S DATA SHEETS

DETERMINATION OF ROOF LEADERS

Prepared by Don Graf, B.S., M.Arch.

Sheet No. F2a
PENCIL POINTS
July, 1932

Required area in □" of leaders = $\frac{\text{Area of roof surface*}}{\text{Constant shown in table**}}$

Arizona	500	Maine	400
Alabama	68	Maryland	345
Arkansas	208	Massachusetts	416
California	400	Michigan	238
Colorado	308	Minnesota	294
Connecticut	370	Mississippi	345
Delaware	330	Missouri	56
Florida	244	Montana	285
Georgia	232	Nebraska	200
Idaho	285	Nevada	285
Illinois	345	New Hampshire	500
Indiana	303	New York	312
Iowa	135	North Carolina	232
Kansas	345	North Dakota	312
Kentucky	454	New Mexico	200
Louisiana	208	New Jersey	222
Oklahoma	264		
Ohio	370		
Oregon	400		
Pennsylvania	263		
Rhode Island	435		
South Carolina	294		
South Dakota	275		
Tennessee	181		
Texas	322		
Utah	1000		
Vermont	345		
Virginia	275		
Washington	400		
West Virginia	384		
Wisconsin	244		
Wyoming	910		

Type of Leader	Leader Size	Area in square ins.
Plain Round Leader	3"	7.07
	4"	12.57
	5"	19.63
	6"	28.27
Corrugated Round Leader	3"	5.94
	4"	11.04
	5"	17.72
	6"	25.97
Square Corrugated Leader	1¾" x 2¼" (2")	3.80
	2⅜" x 3¼" (3")	7.73
	2¾" x 4¼" (4")	11.70
	3¾" x 5" (5")	18.75
Plain Rectangular Leader	1¾" x 2¼"	3.94
	2" x 3"	6.00
	2" x 4"	8.00
	3" x 4"	12.00
	4" x 5"	20.00
	4" x 6"	24.00

Seventy-five feet is the maximum spacing for leaders.
All outlets should be provided with screens or strainers.
Scuppers should be provided for all roofs with encircling parapets.
Round leaders should not be less than 3" in diameter.
Rectangular leaders should not be less than 1¾" x 2¼".

*This is square feet of actual roof surface, not horizontal proj'n.

**Table calculated on the basis of 1□" of leader per 1" of rainfall per 1200 □ feet per hour for maximum rate in different localities as shown by report of Chief of Weather Bureau.

Notes and table of leader sizes reprinted from "Copper Flashings" by permission of the Copper and Brass Research Assn.

DATA SHEET NO. F2a. *Most data (say "day-tuh") on the determination of leader sizes are based on an assumed maximum rate of 8" per hour. This is too high for many states and too low for others. We believe that this Data Sheet, which was worked out with the help of Wm. M. Crane, Jr., of the Copper and Brass Research Ass'n., is the first time in print that the subject has been accurately presented.*

Dogmatic Functionalism—A Reply to Mr. Howe

By Robert L. Anderson*

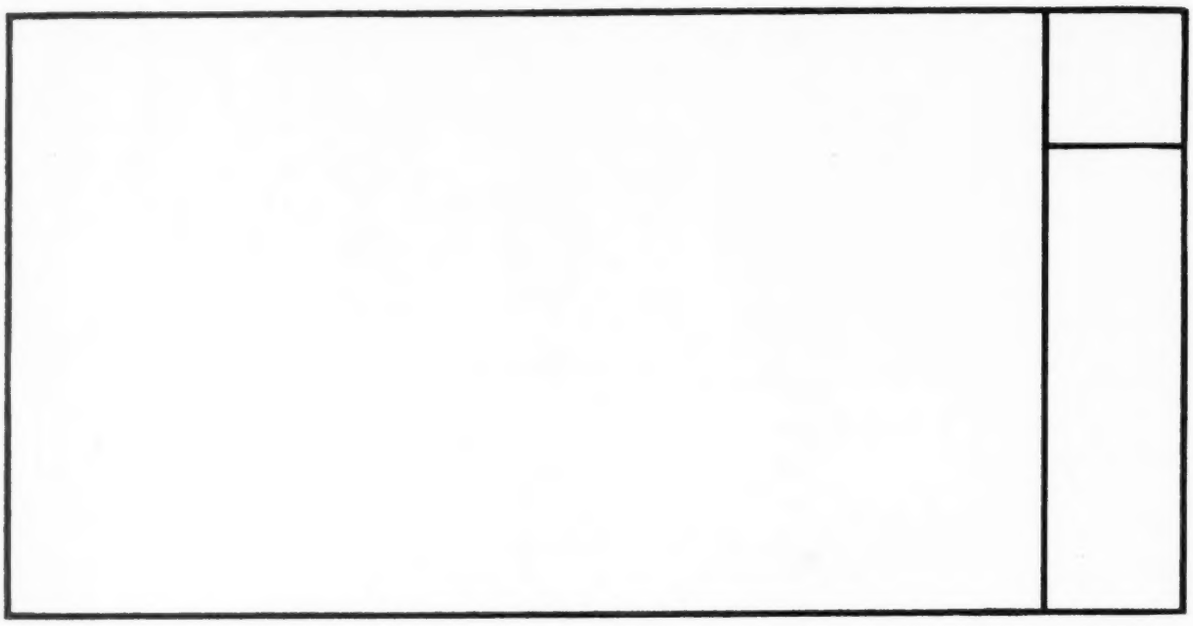
In the April issue Mr. George Howe wrote: "The faith of the functionalist is that æsthetic satisfaction can be found only in the outward expression of the contemporary life process as carried on in and about buildings and that *it never was, or could be, anything else.*" Here we have an assertion which, because of its peremptory clauses (the italics are mine), is comparable only to the dogma of revealed religion; the "was in the beginning, is now and ever shall be" that has evaporated from pure religion. Like humanity at large, having lost the ability to believe without at the same time having sloughed off the necessity for belief, I am desperately in need of an impregnable rock to which I may cling. The ex cathedra finality of Mr. Howe's dogmatic assertion possibly would prove irresistible were it not for one thing. Having categorically confessed his faith, he repudiates it just four sentences later. "To stem the tide of our futility the functionalist has consciously declared his conviction . . . ." Apparently he is confessing after all not an unequivocal faith, merely a corrective measure; a cathartic to purge our architectural system of futility.

Æsthetic satisfaction in the efficacy of a cathartic?—hardly. As a corrective I could perhaps heartily endorse it, but as the sole source of æsthetic satisfaction in architecture I shy at the suggestion. If I need a cathartic (and without doubt I do need one)—well and good—I'll take it. Nor have I any objection to orange juice with the castor oil. But I refuse to build up an elaborate fiction about the orange juice to induce me to swallow.

Such refusal does not necessarily mean that some sort of fiction is not imperative. Artists (Mr. Howe conceives the architect as artist which simplifies matters) have fallen on difficult times. In his *Preface to Morals* Walter Lippmann, discussing the necessity for justification entailed by the collapse of religion, quotes R. H. Wilenski's belief that "all the most intelligent artists of western Europe in recent centuries have been tormented by this search for a justification of their work and a criterion of its value." It is possible that Mr. Howe has given us not a confession of faith, but a justification of the architectural profession.

But whose justification has he given us? Consider his confession of faith. First, it must be "the expression of the contemporary life process as carried on in and about buildings." We have here the popular enlightened conception of the nature and duty of the artist. But it is to be noted that no knowledge of art or architecture is necessary to acquire this concept. One can pick it up anywhere: by reading the Book Section of *The Herald-*

*Associate Professor of Architecture, Clemson Agricultural College.



Tribune, for instance. True, references to art and artists will be few and far between but, one and all, they subscribe to the same doctrine. Now there is only one difficulty with popular enlightened concepts; they may or may not be deep-rooted in the field in which they exercise authority. In this case the concept goes back to one Hippolyte Taine, who was born in 1828 and died in 1893. Taine, please note, was a literary critic, philosopher, and historian. His concept of the artist as expressor of contemporary life is the philosopher-historian's attempt to translate the fine arts into language which he may comprehend. Before Taine æsthetic satisfaction in architecture was something else, Mr. Howe's faith to the contrary. If and when Taine is forgotten it will be likewise something else. Since I would prefer to have prevail an architectural rather than a literary-philosophic concept of architecture, I am, with all good will to Mr. Howe, forced to hope he may prove a poor prophet.

Second, Mr. Howe's faith concerning architecture is "that its ideal must conform for better or worse to the social ideal of its time." Of course if architecture is to express contemporary life it must express the activating ideal, for there can't be life without some sort of social ideal, good, bad or indifferent. The trouble with the social ideal dealt with, the bringing "better material living conditions to the masses, and by so doing liberate their higher faculties," is that it is merely the humanitarian movement of the 19th century popularized by the literature of the closing decades of the 19th and the opening ones of the 20th centuries. So great is the pressure in this quarter that I dare not, even to myself, substitute social for literary-philosophic and trust that Mr. Howe will be once more revealed as prophesying poorly. Let us consider it from another angle.

Grant that our social ideal is economic. Now consider Mr. Howe himself: he looks at "old buildings that seem to grow out of the soil" and sees:—nothing but "a simple agricultural order." When an architect looks at any building and sees, in the final analysis, only an economic order, then architecture is indeed, as Louis Sullivan said, dead. What Mr. Howe is doing is ramming home not how he is to do his work but awareness of who is architecture's master. Grant that the economic order will always be the master of architecture; grant also that it is highly important to know just who the master is; it still does not follow that the master will be better served because his servant is so overawed by his master's personality that he loses his own.

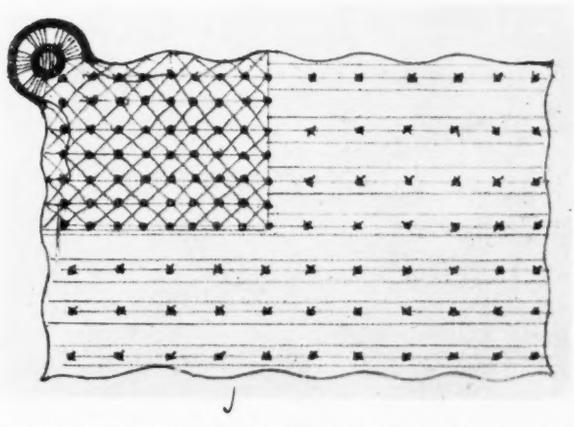
The difficulty with the social ideal as it is talked in architecture is that, like Taine's transposition into a key in which he can play, it is the politico-economist's attempt to score the architectural instrument for a politico-economic symphony. And in addition, such scoring is merely the first draught. What they purpose is that the architect take an active part in changing the social order. Starting from Taine's doctrine of expression, they somehow manage to reverse it completely and evolve a doctrine of impression. Architecture is no longer passively to express life, it is actually to impress, to form it. Hence the position of Mr. Lewis Mumford (unquestionably the outstanding popular writer on architecture) that "the business of the architect is to organize the forces of society, discipline them for humane ends, express them in plastic-utilitarian building." Representing what was known as the Young Intellectual movement, Mr. Mumford would have architects go on a militant crusade. Unfortunately, on such a crusade they would be as tragic and as pathetically futile as the participants of the Children's Crusade of the Middle Ages. Yet, for the life of me I cannot see how, once the social ideal in architecture is accepted, Mr. Mumford's position is not the next logical step.

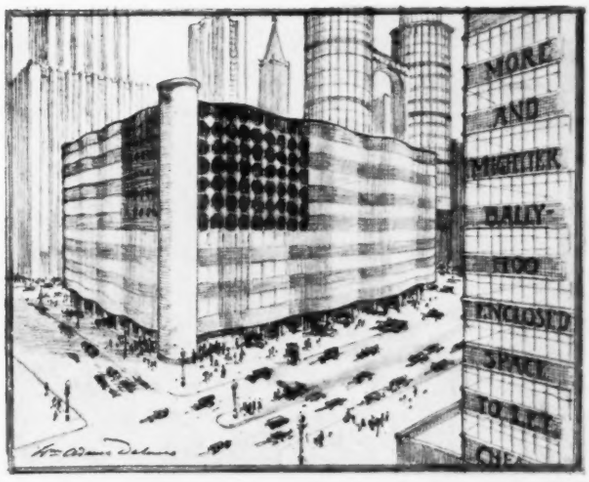
DOGMATIC FUNCTIONALISM—A REPLY TO MR. HOWE

Mr. Howe states: "the architect's only hope as an architect lies in grasping the ideal of his time as he finds it and in purifying it of accidental denaturants." Are not the concepts of conscious expression and of the social ideal for the architect the accidental denaturants; the one philosophic, the other sociological? If there is anything in Taine's doctrine that the fine arts express contemporary life, as the philosophic part of me insists there is, the artist will express life. It is not a question of whether he consciously attempts to do so; not even of whether or not he desires to do so. He is completely helpless in the matter. He expresses life whether he wants to or not. Likewise with the economic ideal. The architect may or may not be consciously *au courant* concerning the latest fashions or fads in economics, but he has built, and will build, according to the dictates of the prevailing economic order. Grant that the other point of view is much more attractive, and much, much more flattering to the individual. If a man could so completely grasp the social ideal of his age, so thoroughly saturate himself with the idols of his times that its living image would take shape under his hand on paper to rise in concrete, steel, and glass to perpetuate the age forever . . . ? If he could somehow manage to perpetuate the perfect ideal . . . ? Unfortunately however, there is no formula that produces geniuses; there never has been, and there probably never will be. In addition, and this is the crux of the matter, the employment of the literary-philosophic concept by the architect is nothing more than his confession that the literary critics and the philosophers have discovered the formula for the wholesale production of architectural giants. And the same thing is true concerning the politico-economic concept. If the architect were a literary critic, a philosopher or a politico-economist, of course it would be otherwise. But he is nothing more than an architect which, heaven knows, should be sufficient for any man.

Possibly, however, the architect is not one but several men. He has, let us say, philosophic and sociological doubles co-existant with his architectural self. For perfect coordination all three must function harmoniously. But the dogma of functionalism, in theory at least, glorifies the doubles and slights the architectural self. In practice it appears to be otherwise. True, Mr. Howe has an intellectual reason for not putting stone pedestals on columns. Granting that exercise of the intellectual faculty was necessary to get him to omit the pedestals, how long would he have continued so to omit them if his eye had not suddenly discovered that columns without pedestals presented most novel and interesting forms? Can architectural interest ever be focussed on anything but forms? Mr. Mumford deliberately refuses to use pictures. To be sure, he has a highly sophisticated reason for so refusing. I suspect, however, that the real reason is that forms—that is to say the visual concept—are of lesser importance to him than ideas—the mental concept. If it were vice versa he would be a painter, a sculptor, an architect and not the literary man which he is.

My contention is that for the architect the hand and eye—the visual concept—are more important than the mind. It is the unfortunate fact that functionalism as it is talked today minimizes the eye and exaggerates the mind. For instance, Mr. Howe is most interesting in discussing the necessity of establishing an architectural type in order that we may achieve expression, for which a "common language" is prerequisite. But note his definition of the common language—"a language such as writers possess, whose imaginative medium is stored with every contemporary human experience." For such the Young Intellectual movement deifies Marcel Proust, the French philosopher-novelist. Is there no distinction between writers and architects; none between architecture and literature? Does it mean that Mr. Howe aspires to be a philosopher-novelist; another Marcel Proust? I suspect not: merely that, as a cultured architect with an appreciation of literature he has, in the turmoil of throwing aside old conventions and visually conceiving anew, permitted writers to conceive mentally for him. For some centuries the world has sanctioned a literary—a mental concept of architecture. When will an architectural concept—a visual concept—once more prevail?

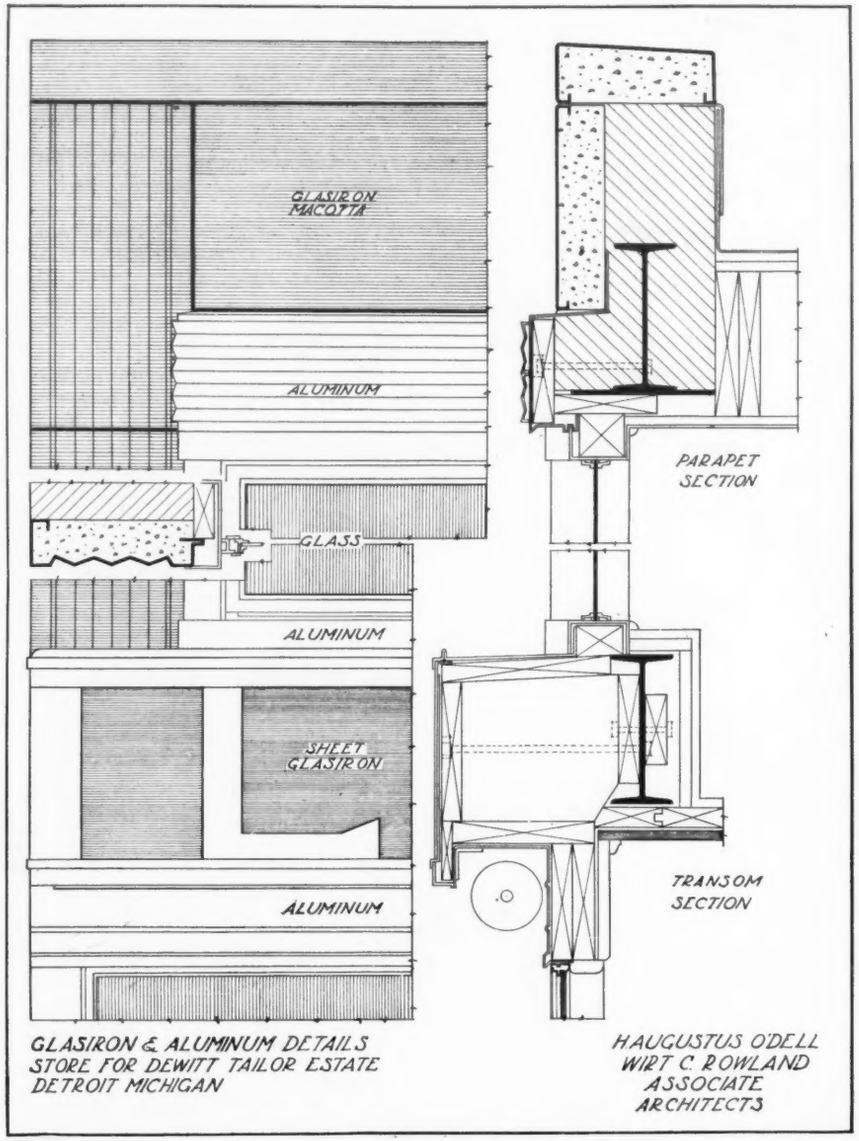




A GOVERNMENT OFFICE BUILDING FOR A METROPOLIS

DESIGNED BY WILLIAM ADAMS DELANO

Mr. Delano, of the firm of Delano & Aldrich, says of his design shown above in plan and sketch perspective: "I feel that it contains all the elements of great architecture. It shows freedom from restraint; it displays none of the narrow provincialism which characterizes the work of the architects of Greece, Italy, France, and even our own Colonial Period. It is free from all the prejudices, inhibitions, fallacies, and traditions which throughout the ages have done so much to cramp architecture and bring it into disrepute. It has form, mass, and movement. The plan expresses the elevation and the elevation the plan: Both are simple and straightforward and display those qualities of Nationalism, Fundamentalism, Functionalism, and Space-enclosurism so rarely found and so much to be desired in the best architecture."



DETAILS OF SHOPFRONT OF DEWITT TAYLOR ESTATE, DETROIT—H. AUGUSTUS O'DELL AND WIRT C. ROWLAND, ASSOCIATE ARCHITECTS

A COMBINATION OF METAL, GLASS, AND PORCELAIN ENAMEL SHEETS BACKED WITH LIGHT WEIGHT CONCRETE

(See text on page 502)

This department conducts four competitions each month. A prize of $10.00 is awarded in each class as follows: Class 1, sketches or drawings in any medium; Class 2, poetry; Class 3, cartoons; Class 4, miscellaneous items not coming under the above headings. Everyone is eligible to enter material in any of these four divisions. Good Wrinkle Section: a prize of $10.00 is awarded for any suggestion as to how work in the drafting room may be facilitated. No matter how simple the scheme, if you have found it of help in making your work easier, send it in. Competitions close the fifteenth of each month so that contributions for a forthcoming issue must be received by the twelfth of the month preceding the publication date in order to be eligible for that month's competitions. Material received after the closing date is entered in the following month's competition.
The publishers reserve the right to publish any of the material, other than the prize winners, at any time, unless specifically requested not to do so by the contributor.

THE PRIZES this month have been awarded as follows:

Class I—Stephen Nolan, Brooklyn, N. Y.
Class II—A.C.H., Oakland, California.
Class III—George C. Sponsler, Jr., Philadelphia, Pa.
Class IV—Harold Warren, Oakland, California.
Good Wrinkle—Austin Barrows, Cincinnati, Ohio.

DOLDRUM SEAS AND RUMORED BREEZES

By A. C. H.

(PRIZE—*Class Two—June Competition*)

Regard the brave forecasting sage
Of broadcast, news, the lecture stage:
His claims to boom the coming days
  Have lost him rep.
The turn was ever due to pop;
Another month—we'd be on top,
Again to go and never stop,
  To hear him tell.
But yet, the man who prophesies
Good was a blessing in disguise—
He filled us up on mere surmise
  And gave us pep
To last until it looks to some
That presently are now to come
Events to end the prolonged glum
  Dejected spell.

CAN A LEOPARD CHANGE ITS SPOTS?

By Robert T. Gidley, Melrose, Mass.

NOW THAT ARCHITECTING is a mite dull, so to speak, some of the boys have temporarily taken to other lines of endeavor. But they are still Architects in spirit. Just listen in on a few of them and be convinced.

Bill, who formerly specialized on Modern, has turned his talents to electric refrigeration and has a prospect just about ready to cave in.

"I tell you, madam, there stands a refrigerator that is a refrigerator. Look at those simple vertical lines and the nifty mooring mast on the top. Built like a skyscraper—and did you ever see anything more distinctive than that main entrance with its non-tarnishing metal trim?" . . .

Steve, who used to wield a mean HB on many a house plan. Steve is selling insurance but if you think he has changed his spots get a load of this:

"Now here, my dear sir, is a twenty payment plan that was especially designed to fit you and your family. Moderate in cost but mighty convenient and a layout that's going to give you a lot of solid comfort. You can easily add on to it from time to time as you need and right now is the best time to start building an estate . . . "

Herman, who used to be a high pressure architectural salesman, has gone rural and is out in the sticks:

"Now that's a mighty fine field you've got there, neighbor, and something ought to be put on it to make it pay. Just leave everything to me. I'll be glad to make you a color drawing showing just how a field of corn will look on the lot about the end of August and if it looks good to you and you want to go ahead I'll come down and stake it out for you right away. And let me tell you that if I make the plans and specifications and superintend the planting you'll have a field to be proud of!"

Edgar used to be a practicing architect until he ran out of practice. Just at present he is Fire Chief in his home town—and what a Chief!

Fireman reporting: "Box 22, Chief!"

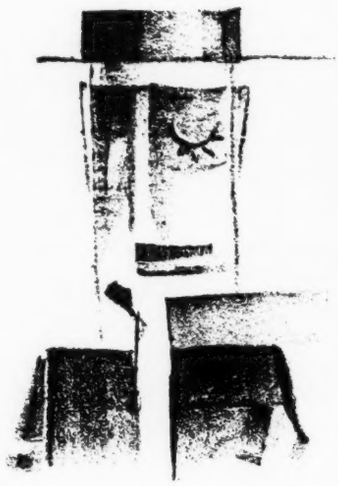
Edgar, taking his feet off the table: "Humph! That old mid-Victorian junk pile of Fred Parker's . . . . Hey, Ed and Frank, grab a couple of those empty extinguishers and fill 'em up with kerosene. Then load 'em on the truck and beat it up to Parker's pronto. Never mind the hose. And you, Joe—get busy and turn out a swell water color of a Georgian house for that site. And make it snappy—I want to use it tonight!"

PENCIL SKETCH BY STEPHEN NOLAN
Cormac's Chapel, Cashel, Ireland
(PRIZE—*Class One—June Competition*)

(See text on page 502)

FIVE MASKS OF ARCHITECTURE

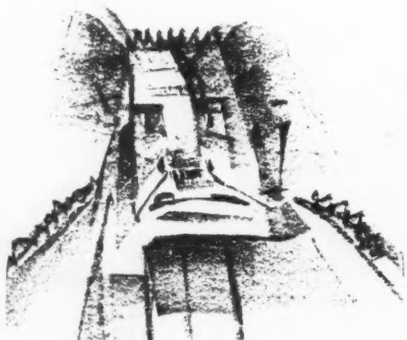
SUGGESTIONS FOR MASKS INTENDED TO INCREASE THE RANGE OF SUCCESSFUL ACTIVITY DURING THE EMERGENCY. THESE MASKS WILL AFFORD THE ARCHITECT THOSE ADVANTAGES WHICH NATURE SEEMS TO HAVE CONSISTENTLY WITH-HELD FROM THE PROFESSION. THE A·I·A· MAY BE FORCED TO ISSUE JUST SUCH A SET AS SHOWN HERE TO EACH AND EVERY MEMBER.



THE ARCHITECT HIMSELF. A PRE-DEPRESSION MASK BY JOHNNY WALKER. PROFESSIONAL BEARING BY TIMKIN. HAIR AND BEARD BY UNEMPLOYED DRAFTSMEN

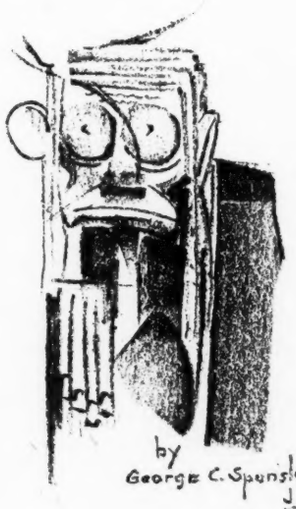
SUGGESTION FOR CLERICAL MASK – CHURCH BOARD MEETINGS & PRESENT GENERAL OFFICE USE.

BELOW - THE MASK OF PATHOS [UN-NECESSARY FOR THE MAJORITY]. FOR USE IN OBTAINING PLACE NEAR HEAD OF BROTH LINE WITH IMPUNITY.



THE SUB-CONSCIOUS MASK. DR. FREUD'S CONTRIBUTION TO ARCHITECTURE. FOR USE IN COWING CONTRACTORS.

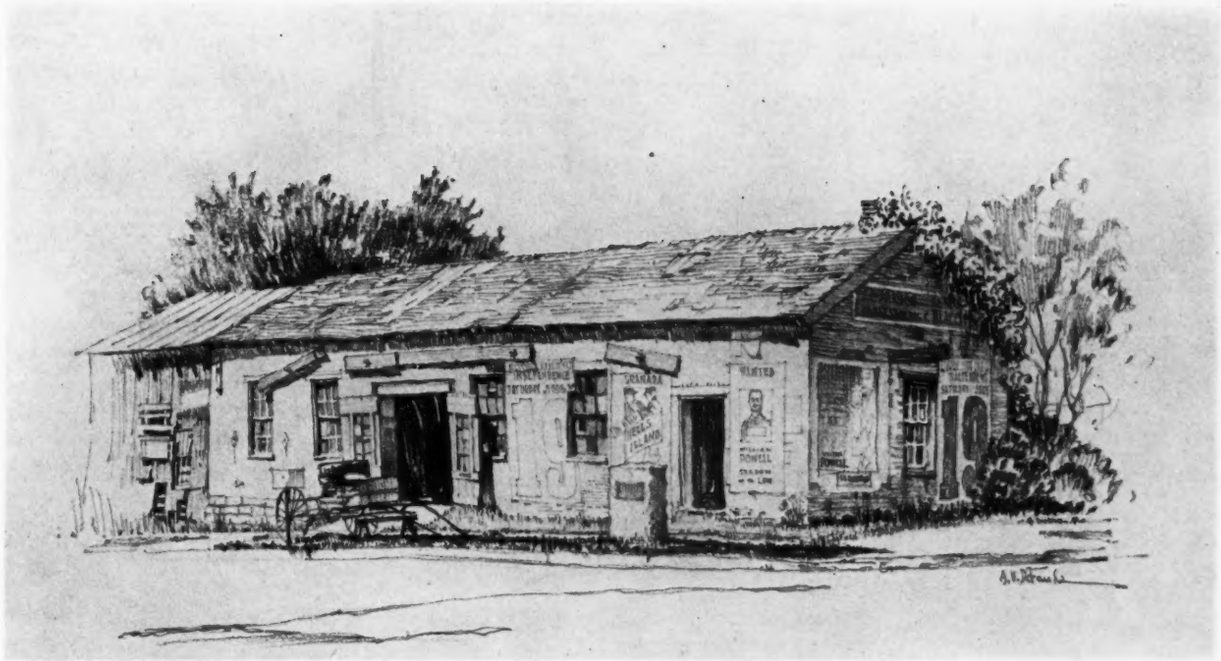
THE MODERN NOTE - A SKETCH IN THE CORBUSIER MANNER TO BE USED AT THE DISCRETION OF THE ARCHITECT AND HIS SECRETARY.



by George C. Sponsler Jr.

"FIVE MASKS OF ARCHITECTURE"—DRAWN BY GEORGE C. SPONSLER, JR.

(PRIZE—*Class Three—June Competition*)



A Pencil Sketch by Ardery V. De Fonds of Rochester, N. Y.

The Old "Covered Wagon" Blacksmith Shop, Independence, Missouri

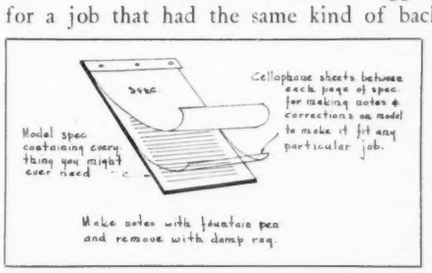
In the old days of the Oregon and the Santa Fé Trails, the "Covered Wagons" made this little shop their headquarters for final outfitting and repairs before starting westward.

MORE ANENT CELLOPHANE

By Austin Barrows, of Cincinnati, Ohio

(Prize—*Good Wrinkle—June Competition*)

The usual method of writing specifications for small residence work seems to consist of digging up an old set for a job that had the same kind of back porch and revamping it to fit the new job. After four or five years of this business some of the clauses begin to make no sense at all. The advent of cellophane, however, has remedied the situation. For, by drawing up a model specification and binding it with a thin sheet of cellophane between each page it is possible to write in notes and cross out items without harming the original model. Writing on the cellophane is easily done with a fountain pen, and after copying a damp rag will restore the key specification to its original beauty.


Spec.
Cellophane sheets between each page of spec. for making notes & corrections on model to make it fit any particular job.
Model spec containing every thing you might ever need
Make notes with fountain pen and remove with damp rag.

If at the present time, anyone is too busy to draw up a model specification, they might take the best they have on hand and insert the cellophane pages.

Another method is to forget the whole thing. Well, maybe I shouldn't have even mentioned it in the first place.

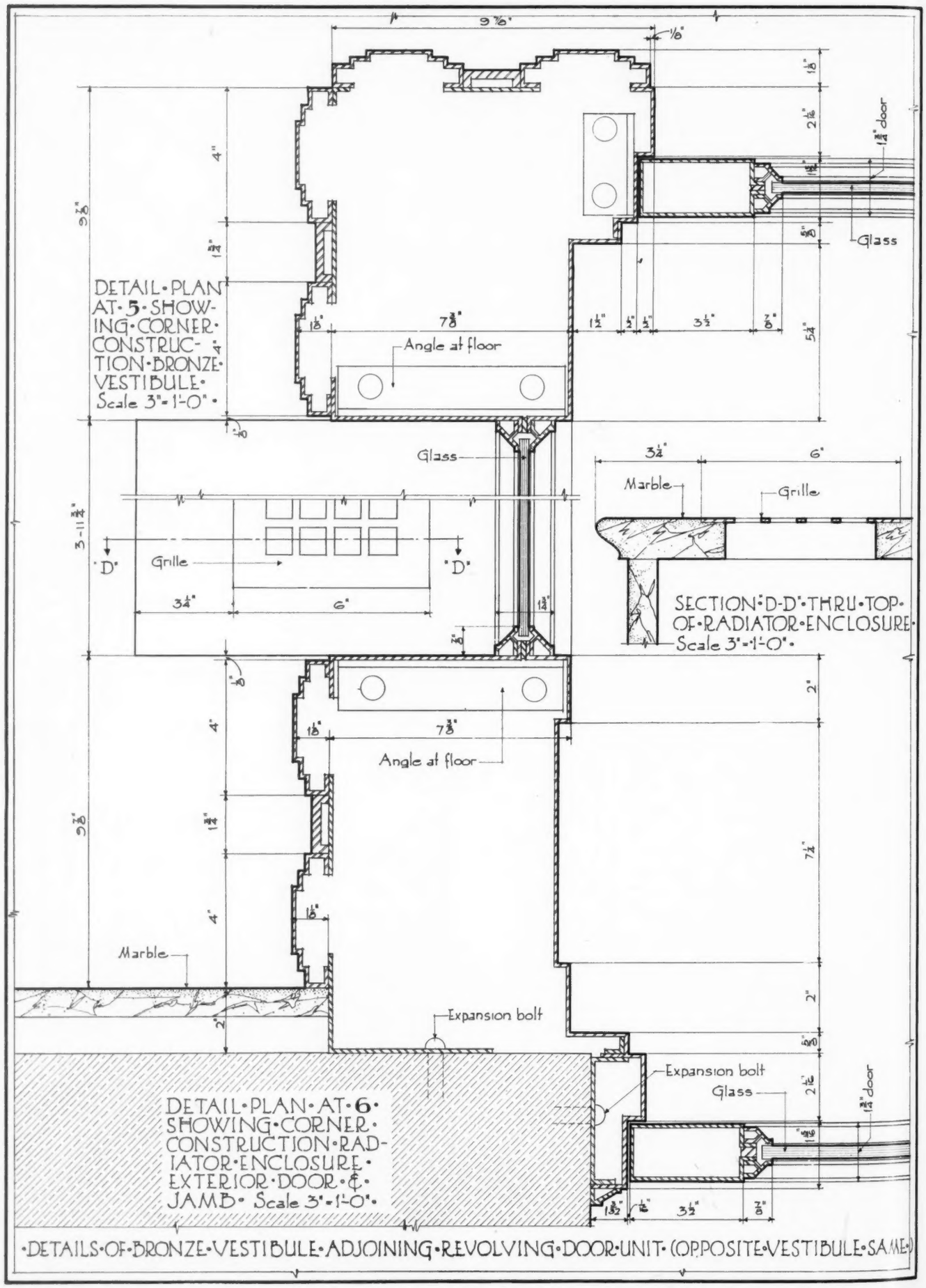
AND ANOTHER USE FOR IT

By Allen L. Bartlett, of New York

A new use for cellophane has been found. It has made its way into the drafting room, at last. In protecting the surface of a completed portion of your drawing, use cellophane instead of regular tracing paper or any opaque material. It is best fastened down by the use of "Scotch tape." The chief advantage is quite obvious: the completed portion of the drawing can be referred to easily, with even the smallest notations or dimensions instantly and accurately read.

Block Print by Harold Warren

(Prize—*Class Four—June Competition*)



BRONZE ENTRANCE DETAILS, III—(SEE PAGE 366, MAY, AND PAGE 436, JUNE)—DRAWN BY PHILIP G. KNOBLOCH

THE SPECIFICATION DESK

Whys and Wherefores of the Specification

13—Tile Work

By Philip G. Knobloch

GENERAL CONDITIONS

General Conditions of the Contract of the American Institute of Architects, current editions, shall form a part of this Contract, together with Special Conditions, to which this Contractor is referred.

ARBITRATION CLAUSE

Any dispute or claim arising out of or relating to this Contract, or for the breach thereof, shall be settled by arbitration. Arbitration shall proceed under the requirements specified in the General Conditions, current edition, of the American Institute of Architects; or under the Rules of the Arbitration Court of the New York Building Congress, or of the American Arbitration Association, and judgment upon an award may be entered in the court having jurisdiction. One of these methods of arbitration shall be chosen at the time of the signing of the contract, or if not then determined the choice of these methods shall be at the option of the party asking for arbitration.

SCOPE

The work included in this Contract and described in the following specifications comprises all the work as indicated by the contract drawing Nos. 1 to 8 and 200 to 202, inclusive.

There is some discussion as to the need for this paragraph. It is suggested that SCOPE should be omitted from the specifications claiming that it is unnecessary, confusing, and misleading. If the practice is to include in this paragraph descriptive information listing rooms, wall, bath, etc., where work is to be done or omitted, we will agree that it should be omitted at once. That sort of information is very dangerous and misleading to the estimator. He might readily assume that the architect has completely listed all work to be done under that heading as final, and neglect to read the balance of the specifications thoroughly.

We include under each heading the paragraph on General Conditions. We do this so that the subcontractor knows that these conditions apply to him as well as to the General Contractor. He is reminded to make it his business to look them over. We believe it is just as important that he know how many drawings comprise the set of plans from which he is listing his materials. Supposing the last two detail sheets were missing, how is he to know. He cannot be suspicious for the numbers check consecutively and in all probability that is the last "detail" sheet. The two additional sheets perhaps have information which he requires, elaboration of some small scale cabinets, counters, etc., which will increase his bid considerably. I have found many instances where this list has aided in cases such as these. All that is necessary is to know the confusion and excitement attending the final days before the bid is due and to look over the returned plans from the various contractors. There are sheets missing entirely, corners torn off, and the sheets rebound with no thought of sheet numbers. How simple for a subcontractor to miss a drawing without a list for him to check from quickly to see if he has seen all drawings and missed nothing that may concern his material list. I have reduced this paragraph to its simplest form.

MATERIALS

Under this paragraph note the kind of tile to be used, describing color, grade, etc., and giving the name of the manufacturer and catalogue numbers.

Setting mortar for floor tiles shall consist of one (1) part of Portland Cement and three (3) parts of sand. Setting mortar for vertical surfaces shall consist of one (1) part of Portland cement, three (3) parts of sand and not more than one (1) part of hydrated lime to ten (10) parts of cement.

We suggest that in selecting tile you be guided in part by the advice of the tile manufacturer who will be glad to assist in advising as to costs, grades, etc. For your information, we have listed the following:

CERAMIC MOSAICS

Unglazed Ceramic Mosaic, furnished in selected and commercial grades, in white; and selected grade, in color.

Glazed Ceramic Mosaic, consisting of Enamel Mosaic, Bright Glazed Mosaic, Dull Glazed Mosaic, and Matt Glazed Mosaic all furnished in selected grade only. Cut Mosaic, Plastic Mosaic, Faïence Mosaic, furnished in selected grade only.

VITREOUS AND SEMIVITREOUS TILES

Unglazed Vitreous and Semivitreous, in Bright Glazed, Dull Glazed, and Matt Glazed finish. Vitreous tiles furnished in Selected and Commercial grades; semivitreous tiles furnished in selected grade only.

PAVING TILES

Flint, Vitreous, furnished in selected and commercial grades. Hydraulic, Semivitreous, furnished in selected grade only. Quarry Tiles, furnished in selected, standard, and commercial grades.

GLAZED TILES AND ENAMELS

White Glazed Tiles, furnished in selected, standard and commercial grades, for walls and ceilings.

Enamels, Dull Glazed and Matt Glazed, furnished in selected and commercial grades, for walls and ceilings.

PLASTIC TILES AND FAIENCE

Plastic Tiles, furnished in selected grade only.

Faïence, furnished in selected and commercial grades.

Samples

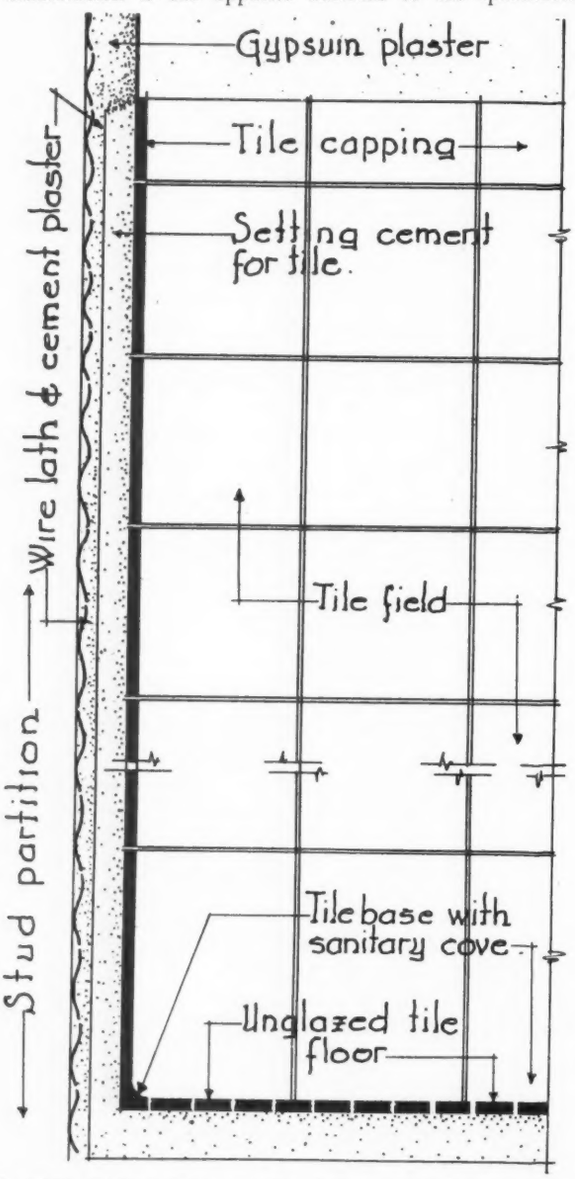
Before delivery of any tile the contractor shall furnish samples of the kinds of tile specified for approval by the Architect.

Tiles are graded. Be certain that when specifying tile that you specify clearly the grade, that is, selected, standard, or commercial, and check same when they arrive on the job. The selected is the best. Standard is average. The difference is mainly in coloring and sizes due to uncertain results in manufacturing.

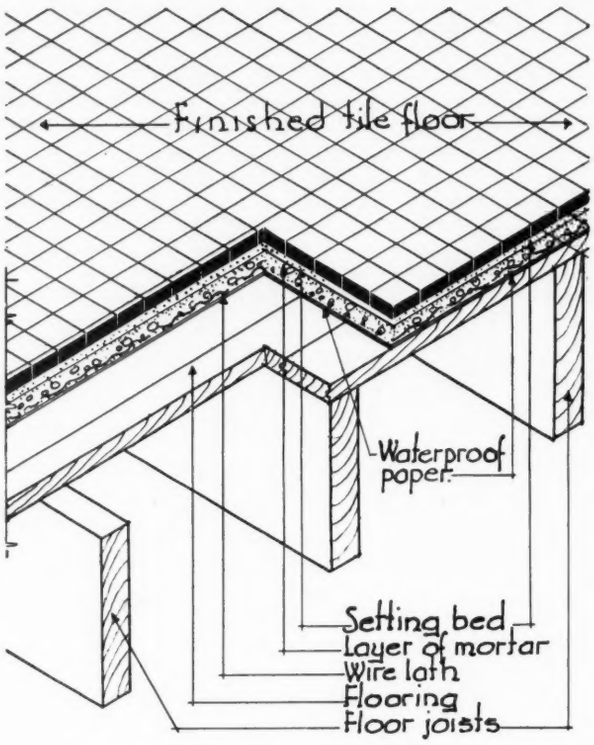
Setting Drawings

Drawings shall be submitted by this contractor for approval of special patterns or designs. The drawings shall indicate in detail, sizes, dimensions, and arrangements of tiles.

In small work this paragraph may be easily omitted. Again we remind you to include only information that applies to the job. A specification padded with useless information is the opposite extreme to the specification which does not furnish enough information. Both are bad examples of specification writing.



SECTION·THRU·TILE·WAINSCOT·SHOWING·CONSTRUCTION·FIG. 1.



SKETCH·SHOWING·TILE·FLOOR·ON·WOOD·CONSTRUCTION·FIG. 2.

Preparatory Work

Rough floors will be brought to approximately 1" below finish floor line for vitreous or mosaic tile and 2" for quarry tile. Additional bed to be furnished under this contract. Wall surfaces to be tiled will receive a scratch coat of cement mortar under another contract. This contractor will furnish any additional bedding required. He shall examine all preparatory work and notify the Architect of any unsatisfactory conditions that would affect his finished work.

Setting Floor Tile

The concrete setting bed shall be thoroughly wetted and uniformly dusted with Portland cement immediately before spreading mortar setting bed. Bed shall be true and even plane, level, or uniformly sloping as the plans indicate. Tiles to be set firmly and tamped solidly into bed until true and even with finished floor lines. Spread no more mortar bed than can be covered with tile at the time of setting.

Tile for shower baths floors to be installed over shower floor pan. Pan furnished under plumbing contract.

Tile nosings, coves, curbings and other moulded features shall be rigidly backed and reinforced with masonry.

As soon as the cement mortar beds have sufficiently set, the tiles on floors or other horizontal surfaces shall be well washed with acid and clean water, and the joints between the tile grouted or jointed as specified under Grouting and Joining.

A tile installation is only as successful as its finished appearance, therefore the setting of the tile is of the utmost importance. Do not slight the setting specifications. Keep them complete and do not attempt to shorten them with a meaningless paragraph reading that "all tile

must be set in a workmanlike manner," and trust that a reputable tile contractor will do your work. Tiling being a finish material will always be a recommendation or a setback to you. We must take a tip from the speculative builder in this case. He makes certain that what is seen is accomplished creditably. (See Figure 1.)

When laying tile on wood floors in either new or old buildings it is not necessary to chamfer the ends of the joists. (See Figure 3.) Rather use the method as shown in Figure 2, using a wire lath secured direct to the subfloor which in turn is continuous over the floor joists. Settlement of joists in Figure 3 will develop cracks in the floor along the joist lines. We have successfully installed tile hearths in old buildings directly on the floor, first nailing wire lath to the floor and trowelling a ¾" bed over the lath. On this the tile was laid. Installations such as these have been in place for at least eight years and have not developed any cracks.

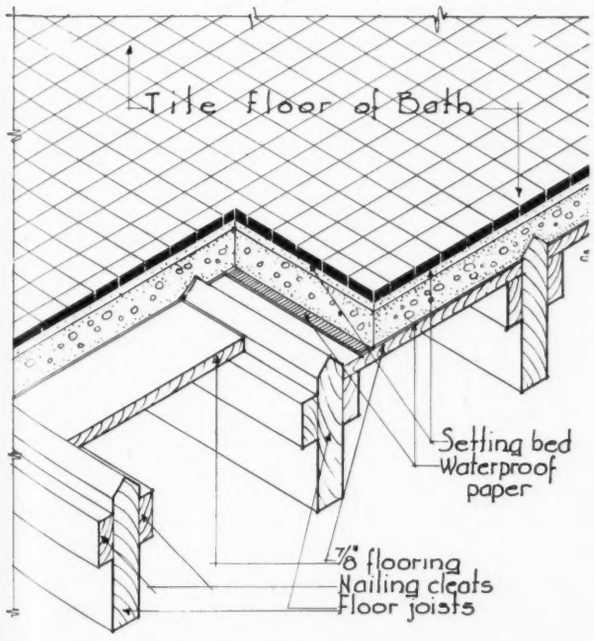
Grouting and Jointing Floor Tile

The joints for all ceramic mosaic floor tile shall maintain a standard width of 1/16 inch. Other floor tile shall have joint width of with a uniform variance, due to the variation in size of tile. Ceramic mosaic floor tile shall have all joints grouted with Portland cement grout, forced into the joints, sprinkled with dry cement and finished flush and true. Other floor tile shall have the joints filled with 1:2 Portland cement mortar, wiped off and cleaned.

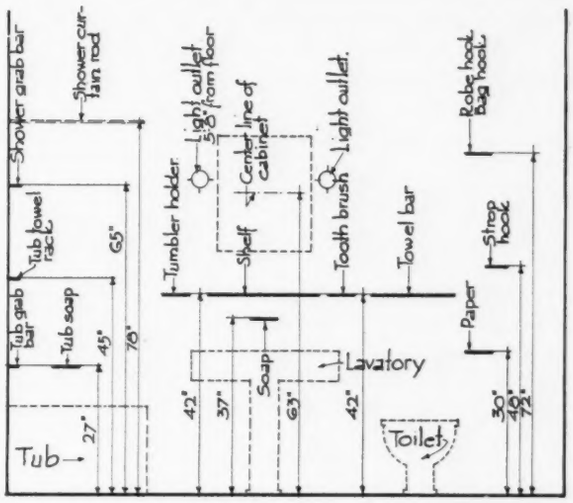
If white or colored joints are required specify them accordingly.

Setting Wall Tile

Before setting wall tile, scratch coat shall be thoroughly wetted. Scratch shall be spotted with tile, placed plumb and true to indicate the finish tile surface. Each tile shall be thoroughly buttered with mortar, tamped in place and brought true to the finished surface. Caps, bases, etc., shall be backed full with mortar and tamped into place. Joints to average in width and shall be filled with Portland cement grout. Excess of grouting shall be wiped off, tile left clean and all joints full and smooth. Ceramic mosaic tiles for wall surface are to be grouted or pointed and left clean as specified under floor tile.



SKETCH·SHOWING·CONSTRUCTION·OF·FLOOR·TO·RECEIVE·TILE·FLOOR·FIG.3·



DIAGRAM·SHOWING·HEIGHTS·FOR·BATHROOM·ACCESSORIES·FIG. 4.

Saddles

Furnished and installed under another Division but this contractor shall set his tile true and level with adjoining floors.

In the usual smaller work where tile, marble, and slate are under one heading because of the small quantities required, this paragraph is unnecessary.

Hearth

Shall be set flush with surface of adjoining floors.

Swimming Pool

Where tile work is called for in connection with swimming pools, shower rooms, Turkish baths, steam rooms, etc., the tile shall be set as specified for other work except that an approved brand of integral waterproofing shall be mixed, in accordance with the manufacturer's specifications, for mortar setting beds and jointing mortar.

Cutting and Fitting

This Contractor shall do all cutting and fitting of tiling that may be required for all fixtures, outlet boxes, switch plates, register boxes, fittings, piping, and conduits, extending through tile or requiring fittings or support that extend through tiling, and shall repair all tiling after other trades have finished, leaving the entire work clean and perfect.

Protection

After grouting and cleaning, as specified under Paragraph 51, this Contractor shall cover all the tile floors with a protective covering of heavy building paper or wood shavings.

Cleaning

As soon as the work in this Division is completed, this Contractor shall carefully re-clean all parts of same; all joints shall be carefully pointed, all defective material cut out and replaced with perfect material, all damage repaired and any required dressing or rubbing done, leaving the entire work clean and in perfect condition.

Where acids are used for cleaning tile work, extreme care shall be exercised to protect metal fittings and finished hardware against injury. The use of hydrochloric or muriatic acid is prohibited in tiled rooms or spaces where chromium plated fittings or hardware have been or are to be installed. This Contractor will be required to replace, without additional compensation, any metal fittings or

hardware injured through the use of cleaning agents.

BATH, TOILET, AND SHOWER ACCESSORIES

Under this heading list in detail all accessories required such as glass and paper holders, towel racks, etc. State manufacturer's name, catalogue number and number of accessories required.

We suggest they be listed under room designations i. e., Men's Toilet, Girls' Showers. This provides a complete list and also gives the architect a check on his total accessories so that nothing is forgotten.

There is some discussion as to the correctness of listing accessories under this division. Many architects believe accessories should be correctly specified under plumbing. In our opinion, accessories are mostly installed in connection with tile, marble, and slate and it seems consistent to have this contractor do the installation as it affects mainly his materials. He is better fitted to drill, cut, etc. in his materials. The only exception we feel that can be made is when metal stall and shower partitions are used and then we believe the contractor installing the metal partitions should install the accessories which affect his work only, and then only when there are a goodly number of accessories. Do not separate the accessories for a dozen or so units. (See Figure 4.)

GUARANTEE

This Contractor shall furnish a written guarantee, warranting all work installed under this Contract for a period of one year from date of acceptance of same, as evidenced by final payment, and binding himself to repair or replace, at his own expense, when ordered to do so by either the Owner or the Architect, any and all work which may show defective material or workmanship within the said period.

WHITE PORTLAND CEMENT

AUTHOR'S NOTE: *After the publication of my article on "Building Stone" (December, 1931, January and February, 1932), one of my readers very kindly furnished me with some additional facts on White Portland Cement. Although some of the information had already been written in my article on "Lime, Cement, and Plaster" (September, 1929), the article below is published for the benefit of those who may not have read my earlier article, and for those who may have read it and would like further information on the subject.—David B. Emerson.*

It can well be said that one of the outstanding contributions that America has made to the building arts is White Portland Cement. This product was originated in this country in 1907 and has been an important factor in the utilization of cement in concrete work for artistic as well as structural considerations.

The initial conception of a White Portland Cement came to that well-known authority on Portland Cement, the late Dr. S. B. Newberry. Dr. Newberry began his preliminary experimentations in 1902, working in collaboration with his brother, William B. Newberry.

These early experiments were aimed at determining whether or not a pure White Portland Cement could be produced with the materials available in this country. The Newberrys used various mixtures of limestones and clays and were soon convinced that the idea was entirely sound and that it was clearly feasible to produce, on a commercial basis, a strictly White Portland Cement.

The success of this research and laboratory study of the problem led to the establishment of the first plant for the manufacture of White Portland Cement at York, Pa., in 1907. At about this time, another plant at Northampton, Pa., started making White Portland Cement. Both plants have been in operation ever since and their products are shipped to all parts of the world.

From that date until quite recently the United States has supplied the entire White Portland Cement requirements of the world. For all practical purposes, the White Portland Cement market is still controlled by American producers as only a small portion of the world's consumption is obtained from sources outside this country.

Prior to the development of White Portland Cement by the Newberrys, some experiments had been conducted in Europe and a few semi-white cements had been produced over there. However, none of these European white cements were Portland Cements. Both their quality and color were uncertain and this lack of dependability had prevented their extensive use.

It was typical of the attitude the Newberrys brought to the problem, that from the very first American White Cement was manufactured to meet and exceed the requirements for Portland Cement as laid down by the American Society for Testing Materials. The entire process was surrounded by exacting precautions to assure a white cement that was always uniform in the pure whiteness of its color. Adherence to these standards produced white cement of such outstanding qualities that it quickly became world famous as a dependable, high quality product that could be relied upon for both uniformity of color and permanency of result.

There is virtually no difference in physical properties between White Portland Cement and Gray Portland Cement. White Portland Cement can be used wherever Gray Portland Cement is specified, and it alone solves the problem where a white or colored concrete or mortar is desired.

The processes and machinery used are similar to the methods utilized in the manufacture of Gray Portland Cement. However, the cost of producing White Portland Cement is much greater, due to the scarcity of raw materials and the precautions that must be exercised in the selection and preparation of the materials.

The chemical composition is practically the same, except that in White Portland Cement the iron content is negligible. This, in a large measure, is responsible for the pure white color. The absence of iron in the chemical composition of White Cement has no effect on the strength or setting qualities of the concrete or mortar.

Most Gray Portland Cements carry certain chemical elements that produce stains. White Portland Cement is free from these chemical elements and is absolutely nonstaining. This factor has been responsible for its wide use as a nonstaining mortar in the setting, backing, and pointing of cast stone, cut stone, face brick, etc. If materials other than a nonstaining cement are used for mortar, unsightly stains will appear on the face of the stone and mar its beauty.

White Portland Cement can be successfully colored and produces tinted effects that are clear and uniform. This is not possible when Gray Portland Cement is used. Only pure mineral oxide cement coloring pigments should be used and they should be guaranteed by the manufacturer to be lime-proof.

Pure white concrete can be obtained by the use of pure white aggregates such as white sand, crushed marble, quartz, etc. By using colored aggregates, many beautiful effects are possible and a wide field is opened up for individual artistic effort.

Automatically waterproofed white concrete and mortar

(Continued on page 34, Advertising Section)

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The Master Drawing Pencil

Berkshire Trees No 7

WEEPING WILLOW ▲ The wave-like tops of foliage masses and the pendant boughs are the principal characteristics. This tree is ALWAYS graceful, upper branches cascading to those beneath quite like falling water. Solid foliage demands light and shadow. Writhing branches appear black. Pencil strokes can not be too definite. 2B - 3B - 4B Eldorado.

Next month . . . . . Pine trees illustrated

Send for samples of ELDORADO *to the* JOSEPH DIXON CRUCIBLE COMPANY, *Dept.* 167-J, Jersey City, N. J.

SERVICE DEPARTMENTS

THE MART. In this department we will print, free of charge, notices from readers (dealers excepted) having for sale, or desiring to purchase books, drawing instruments, and other property pertaining directly to the profession or business in which most of us are engaged. Such notices will be inserted in one issue only, but there is no limit to the number of different notices pertaining to different things which any subscriber may insert.

PERSONAL NOTICES. Announcements concerning the opening of new offices for the practice of architecture, changes in architectural firms, changes of address and items of personal interest will be printed free of charge.

FREE EMPLOYMENT SERVICE. In this department we shall continue to print, free of charge, notices from architects or others requiring designers, draftsmen, specification writers, or superintendents, as well as from those seeking similar positions. Such notices will also be posted on the job bulletin board at our main office, which is accessible to all.

SPECIAL NOTICE TO ARCHITECTS LOCATED OUTSIDE OF THE UNITED STATES: Should you be interested in any building material or equipment manufactured in America, we will gladly procure and send, without charge, any information you may desire concerning it.

Notices submitted for publication in these Service Departments must reach us before the fifth of each month if they are to be inserted in the next issue. Address all communications to 419 Fourth Avenue, New York, N. Y.

THE MART

Lewis M. Lawrence, 76 Lake Avenue, Melrose, Mass., has for sale about fifty architectural books, many rare. Please state requirements.

Simon Gorewitz, 55 Van Ness Place, Newark, N. J., has for sale the following copies of PENCIL POINTS: all of 1930, and from January to August, 1931, inclusive, in good condition.

Charles T. Aubin, P. O. Box 1005, San Antonio, Texas, would like to obtain copies of the following magazines: *Architecture*—January, 1927, to present date; PENCIL POINTS—complete year 1930; *Architectural Digest*—all of 1928, 1929, 1930, 1931, 1932 to present date; *Pacific Coast Architect*—1928 to present date; *Architectural Record*—all of 1929, 1930; *Architectural Forum*—June, 1929, to January, 1930.

Robert Rider Tufts, 1919 West 91st Street, Chicago, Ill., would like to obtain copies of PENCIL POINTS from January to August, 1925, inclusive, and January, 1926. He has for sale the following copies: all of 1927 and 1929; April and May, 1928.

Roy Arvidson, 604 11th St., S. W., Little Falls, Minn., has for sale Part I and Part II of Knobloch's *Good Practice in Construction,* in perfect condition. Price $5.00 for both, postpaid.

Richard W. Bock, 2395 Columbia St., Eugene, Oregon, would like to obtain a copy of the February, 1930, issue of PENCIL POINTS.

Fred J. Schmidt, 4924 10th Ave., Los Angeles, Calif., would like to obtain a copy of the July, 1930, issue of PENCIL POINTS.

D. Wynne Thomas, Bodnant, Lostock Park, Bolton, England, has for sale the following books: A. N. Prentice's *Renaissance Architecture and Ornament in Spain,* $50.00; Thiollet, Roux & Perrot's *Recueil de Menuiseries et Decorations,* $2.00; R. & J. Adam's *Decorative Work,* large folio plates, $8.00; G. A. Manetti's *Studio Degliordini di Architectura,* $2.00; A. Levy's *Le Moniteur des Architectes,* $4.00; Italia Artictica, *Venezia, Ravenna, Padova, Vicenza,* $3.00; Joseph Nash's *The Mansions of England in the Olden Time,* $5.00; Studio year books for 1910, through 1915, 1917, 1919, 1920, and 1929, $3.00 per volume; E. D. B. A. *Concours d'Architecture* 1912-1913, $3.00.

Share Architectural Offices: Unusual opportunity for architect or allied organization to share attractive well-equipped architectural offices in New York; low rental, desirable location, excellent light, or would consider sharing offices of some other architect. Telephone BO 4-0474, or write to PENCIL POINTS MART.

PERSONALS

F. NELSON BREED, ARCHITECT, has moved his office from 10 East 49th Street to 25 West 45th Street, New York.

KARL B. WEBER, ARCHITECT AND ENGINEER, has moved from 114 Montana Street to Perrysville Avenue at East Street, N. S., Pittsburgh, Pa.

GEORGE W. SABIEL, ARCHITECT, has moved from Yonkers, N. Y., to 101 Park Avenue, New York.

HERMAN B. GELFAND has been admitted to the general practice of architecture in the state of New Jersey. His address is 784 So. 16th Street, Newark.

SETTERBERG, KADIC & SCHMITT, ARCHITECTS AND ENGINEERS, have opened their office at 127 North Dearborn St., Chicago, Ill.

LESLIE PHILIP POTTS, architectural draftsman, Winterthur Farms, Winterthur, Delaware, would like to receive manufacturers' catalogs for an A. I. A. file.

WILL W. GRIFFIN, ARCHITECT, has opened an office for the practice of architecture at 452 Spring Street, N. W., Atlanta, Ga. He would like manufacturers' literature.

WALTER JOHN SKINNER, ARCHITECT, formerly with Muirhead Shops, Interior Decorators, has opened an office at 952 Main St., Bridgeport, Conn., for the practice of architecture and interior decoration. He desires manufacturers' catalogs.

CHARLES H. GEARHART, ARCHITECT, 3416 West 8th Street, Cincinnati, Ohio, would like to receive manufacturers' catalogs and all building information to be used in the designing of medium and higher priced homes.

WALTER POLLATZ, ARCHITECT, 522 E. Meinecke Ave., Milwaukee, Wis., would like to receive manufacturers' catalogs and samples for filing.

ARTHUR D. PICKETT, ARCHITECT AND ART DIRECTOR, has terminated his connection with the Associated Tile Manufacturers, and is now with the Sparta Ceramic Co., 110 East 42nd St., New York.

FREDERIC W. MELLOR, ARCHITECT, has moved his office from 386 Fourth Ave., to 110 East 42nd Street, New York.

WALTER A. DOMANN, ARCHITECT, has opened an office for the practice of architecture at 2464 N. 26th Street, Milwaukee, Wisconsin.

GASTON GAGNIER, ARCHITECT, has moved from 660 St. Catherine Street West, to Room 107, 308 St. Catherine Street East, Montreal, Que., Canada.

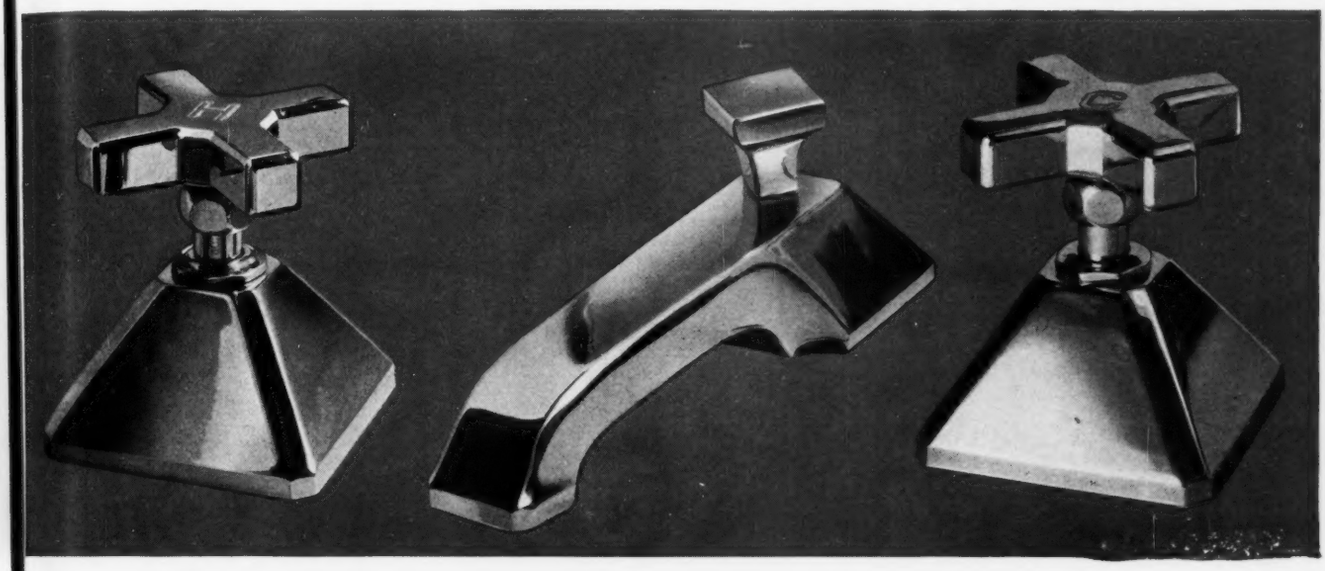
HERMAN L. MACK, ARCHITECT, has opened his own office at 2428 Liberty St., Trenton, N. J., and would like manufacturers' catalogs and samples.

(Continued on page 32)

EMPLOYMENT SERVICE ITEMS WILL BE FOUND ON PAGE 30, ADVERTISING SECTION

VOGUE FITTINGS BY SCOVILL

Built to the Architect's Requirements



IN PLANNING the new Vogue fittings, Scovill sought to turn out a line that would meet every requirement of the architect. In fact, architects themselves were consulted on points of design and construction. Scovill engineers interpreted their suggestions into practical plumbing terms. The result is a line that embodies sound ideas of beauty and utility.

The beauty of these fittings is timeless. They are modern but not extreme. They are not going to "date." They can be used with either old or new types of enamelware fixtures, and in either case, blend perfectly.

And these fittings have a sturdy utility behind their external beauty. They are made of fine materials. They have patented mechanical features and behind-the-wall construction that guarantee efficient, long-term service. They are backed by the Scovill reputation for quality, built up during 130 years in business.

Vogue fittings include all parts of the lavatory, bath and shower equipment. You will guard the standards of your work by specifying them in hotels, apartment houses, private residences—particularly for modernization jobs that you want to *stay* modern.

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Scovill

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Established 1876

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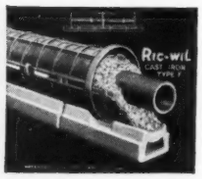

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CONDUIT SYSTEMS FOR UNDERGROUND STEAM PIPES

SERVICE DEPARTMENTS

(Continued from page 26)

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EARLE A. DEITS, draftsman, 19 E. St. Vrain St., Colorado Springs, Colo., would like to receive manufacturers' samples and catalogs.

FRANK DICKERSON, JR., 918 11th Street, Beaver Falls, Pa., would like to receive manufacturers' literature on design, equipment, and construction of homes and small buildings.

HARRY GRAN, draftsman, 663 Pennsylvania Ave., Brooklyn, N. Y., would like to receive manufacturers' samples and catalogs.

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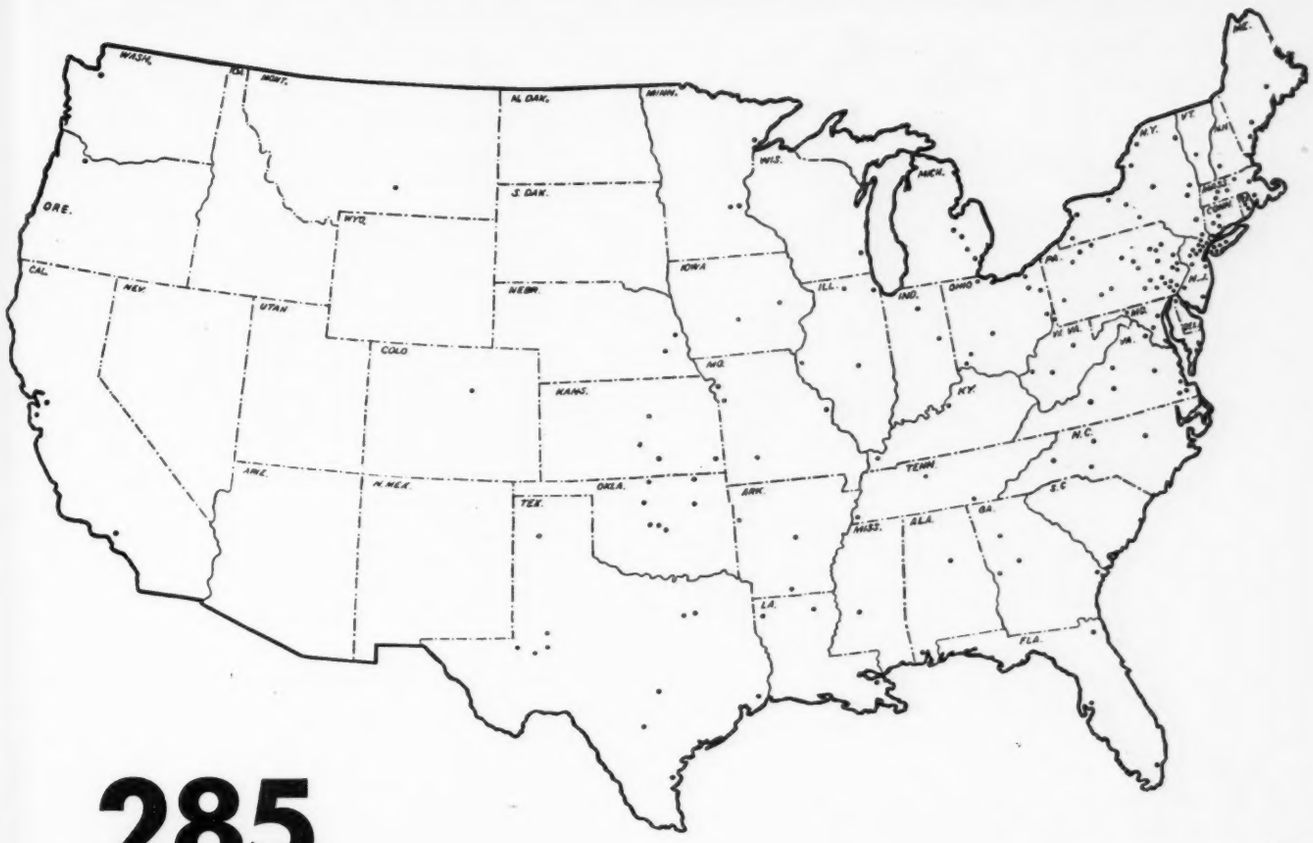

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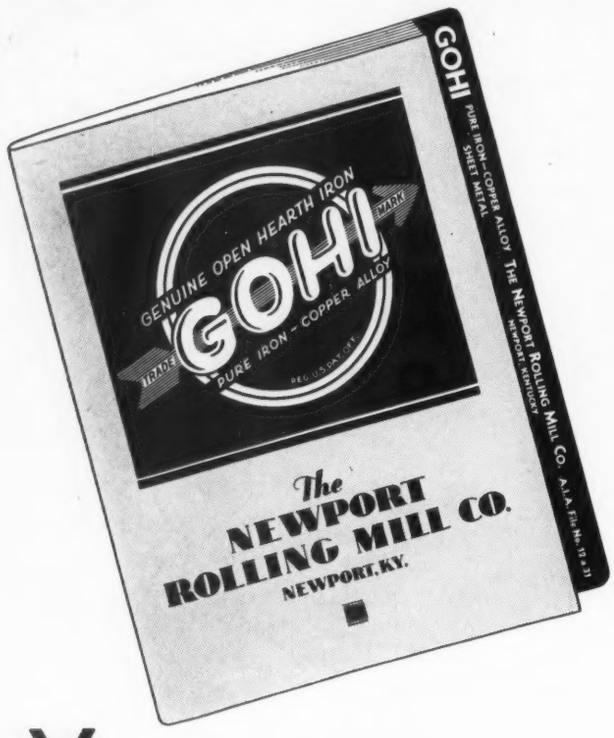

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WHITE PORTLAND CEMENT

(Continued from page 516, Editorial Section)

is obtained by simply using Waterproofed White Portland Cement. This waterproofed white cement is manufactured by incorporating with the cement at the mill a highly water-repellent material (calcium stearate). It is recommended for use in all work that will be exposed to the weather or moisture.

As previously stated, it is well to remember that White Portland Cement or the Waterproofed White Portland Cement can be used to produce concrete of the same great strength and durability as gray cement. It has been extensively and successfully used for pouring solid monolith swimming tanks.

At this time, the writer readily recalls one outstanding and successful job where a Waterproofed White Portland Cement was used in all the monolith reinforced concrete construction of a large building. The walls ranged from 12″ to 36″ thick. The job referred to is the Power House of the Adirondack Power & Light Corporation of Amsterdam, N. Y.

Later, additions to this plant were made and the same materials and method of construction were used. There are many other excellent examples of the use of structural concrete made with White Portland Cement. However, as a matter of economy, White Portland Cement is more extensively used as a veneer or finish coat in many forms of concrete. With its use the architect can secure strong, durable concrete that, at the same time, lends itself to distinctly artistic and pleasing results.

An acquaintance who has recently returned from a trip through South America reports that White Cement is more extensively used there than in the United States. The artistic tastes and trends in this country, however, are so definitely favorable to White Cement that its augmented use is assured. For example, Murphy & Olmsted, Architects, used exposed white cement concrete for the Shrine of the Sacred Heart at Washington, D. C.

White Cement is extensively employed for stucco construction. It provides the architect with a material which can be colored, molded, and textured to meet his needs.

In terrazzo work, it offers the advantage of a pure white or tinted background that more clearly identifies the colored marble chips. This produces a finer grade of terrazzo effects that are both brighter and more colorful.

White Cement is used in the manufacture of cast stone by every known method, producing a stone that is beautiful, practical, and durable. It is used for the finish coat on the inside walls and floor of swimming pools, in the manufacture of colorful mosaics, ornamental garden and lawn furniture.

At the Curtiss-Reynolds Airport, Glenview, Illinois, a white concrete apron was laid in front of the hangars to give a contrast for the green grass, and facilitate landing. This white apron is plainly visible from the air at a distance of twenty-five miles. Another example of its use in this way is at the Municipal Airport at Pittsburgh, Alleghany County, Pa., where it is used in contrasting strips of pure white and black.

Many State Highway Departments use white concrete curbs, sidewalks, bridges, balustrades, and center traffic lane markers to make their highway systems more safe and more beautiful. It is a material that meets the most rigid structural requirements, yet offers the widest latitude in both design and color treatment.